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# **Gohres Construction Co., Inc. Jobsite Safety Meeting Guide**

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## **Tail Gate Meeting Guidelines**

Gohres Construction Co., Inc. shall hold their Tail Gate Safety Meetings each week in conjunction with the weekly subcontractor meeting. The project supervisor or foreman shall review a Safety Topic contained in this safety guide earlier in the previous week. Sometimes the topics are sent to the job site by fax or Email if a certain topic needs to be addressed.

Copies are made of the topic and passed out to those attending the meeting. The foreman selects an individual to read the topic aloud while the others follow along. Following the reading of the topic there is an open discussion. Particular attention is paid as to how that week's topic applies to the job site. Also encouraged are discussions regarding safety concerns and safety items of interest.

Prior to the ending of the meeting, all individuals are required to print and sign their name on the meeting report/attendance form along with the company they represent. The safety meeting report is turned into the office with every week and the originals shall be kept in a bound notebook on the jobsite. A log is kept for each employee listing the training they have received along with the safety meetings they have attended.

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## ***WHY PREVENT ACCIDENTS?***

### **ACCIDENT PREVENTION: WHY IT IS IMPORTANT TO YOU**

Why is it so important to prevent accidents? Do you view accident prevention as simply a way to avoid getting hurt? Do you work safely just because you want to? Perhaps you view accident prevention as a way of keeping your company happy or your supervisor off your back. Maybe you just do it because you have been told to.

Of course there are many reasons that a company wants its employees to work safely. But every one must have a more important reason to work safely than just because the company said to. They must have a personal reason. Your reason may be your family. What would they do if you were to get hurt? How about your hobbies? Would you still be able to enjoy them with a serious disability?

What you do for a living is nothing more than a means towards a goal that you have set for yourself. That goal may be the education of your children. You may plan to buy a home or a car. Maybe you want to get married after you have saved up enough money. Maybe your goal for now is just to make it to Friday night and going out on the town. Whatever your goals may be, they all generally tie back in some way to what you do for a living. And what you do for a living could be seriously derailed by an accident. All your goals can go up in smoke if you are injured and disabled.

A safety program is designed to help you reach your goals. It is not there just to make your work harder, or slower, or to meet some governmental guidelines. Safety and accident prevention programs are designed to PROTECT YOU so that you may reach your personal goals. When an unsafe act is pointed out to you, it is done so to help you by eliminating obstacles or job hindrances AND to insure that you get home all in one piece.

Every time you approach a project, every time you pick up a tool, every time you start a piece of equipment or machinery, think SAFETY. Look for what can go wrong and eliminate that possibility BEFORE your goals come to an abrupt end.

### **TAKE SAFETY PERSONALLY: MAKE IT A PART OF YOUR LIFE GOALS.**

**THINK SAFETY!**

## ***WORKING TOGETHER***

Have you ever wondered who writes the rules? The safety rules, that is? Has it ever occurred to you that maybe those people who wrote the rules just don't have a clue as to what's really going on out in the field, or out in the plant or in the world for that matter?

Well let's take a look at these people who wrote the rules: It was the guy we've all heard about who cut two of his fingers off after he wired up the guard on a circular saw. He was helped by the machinist who didn't have the time to go back to the lunchroom for her safety glasses and lost an eye when the bit broke in the drill press. They both got advice from the fellow who had his head split open by a falling hammer because he just plain didn't like to wear hard hats.

I think you get my point here. If not, then let me put it another way: Each and every safety rule came about because someone was hurt, maimed or killed. Their misfortune contributed to our knowledge of how accidents happen and how to avoid them. Rules came into being in order to help you avoid a similar accident or injury.

Your company is very interested in your safety. It has provided you with the tools; equipment and working conditions that will help you do your best. But in return, the company expects certain thing from you. It expects your cooperation in abiding by the rules, in assisting your fellow workers with a willing attitude, by helping your foreman by following their instructions and by your valuable comments and suggestions. It also looks for your cooperation by maintaining your physical fitness to perform your job, by not showing up sick or under the influence of drugs or alcohol, and by getting the proper rest at night.

By cooperation or working together with your company, a win-win situation is created that benefits everyone involved. The most obvious benefit is a safer and more productive work place. A somewhat less obvious, and some would mistakenly say a selfish or greedy benefit, would be more money for the company. Let's take a look at this "money" benefit.

There is no doubt that if a safer and more productive work place is created, then the company stands to make more money. There is less down time due to accidents, insurance rates decrease, operating cost are lower and profits are up. But what happens when profits go up? The company becomes more competitive. It can now sell its products, be it through construction or manufacturing, for less. Being more competitive means more work for you, more tangible benefits like profit sharing, or raises, paid vacations, holidays. Simply put, healthy employees insure a healthy company and a healthy company means happy employees.

So you see, safety rules benefit everyone. By working together with your company and fellow employees to ensure a safe working environment, you are, in many ways, ensuring your own physical and financial well-being. It is not just a tired old phrase to say SAFETY FIRST. In fact it's the only phrase that makes sense when it comes to getting the job done, on time, under budget and, most importantly, a happier, healthier you when it's complete.

### *Safety and Saving Time*

Time, on any construction project, is money: Wasted Time = Wasted Money. So it goes without saying that the key to a profitable project is getting it done "on-time" or within budget. But getting the project done quicker does NOT mean getting it done in a manner, which is not safe. To ensure that time is utilized to its best and that the job site remains safe, use the following, time saving tips.

1. Keep an orderly work site. Assign one or two people the responsibility of keeping the job site clean so the workers don't have to climb or walk around construction materials and waste. Make it an ongoing process and don't leave the mess to clean up at the end of the day, because it won't get done! A clean site is a safe site.
2. Send any unused material back to the shop as soon as possible. This keeps the site clean and orderly and gives management the opportunity to ship the materials to another site where they can be used.
3. Don't overcrowd materials and workers. Give the crew room to work; they will be quicker and safer.
4. Although you have now assigned a person or team the responsibility for a clean and safe work site, make sure that the rest of the crew understands that it is EVERYONE'S responsibility to maintain good housekeeping standards.
5. Always keep an eye out for the little thing that may cause an accident; an accident is Lost Time, Big Time.
6. Keep the toolboxes and cabinets neat and orderly. It doesn't take much imagination to realize that digging around for a misplaced tool is lost time. And using the Wrong tool because you could not find the Right tool is, in most all cases, unsafe and a no.
7. Put the garbage in the garbage. This may seem simple but how many of you just walk away from that fast food bag after lunch? Now the wind comes up and the stuff is blowing all over the place. PUT IT IN THE TRASH before someone twists his or her back getting it out of a trench that is ready to backfill, or worse yet, falls into the trench headfirst.

All this boils down to one simple statement, which we have all heard over and over again: "Put Things Where They Belong". By doing so you will be using time to its best, and you will make the job easier, smoother, quicker.....and Safer.

## *Why Take a Chance?*

Have you ever made a decision to break a safety rule? How long did it take for you to reach that decision? What did you gain by taking a chance? It only takes a moment to decide to break a safety rule, yet that one moment could change your life forever. This week's **Tail Gate Safety Topic** offers you an opportunity to think about your personal safety behavior, both on and off the job. We'll talk specifically about taking safety risks, your personal commitment to safety, and what you can do to keep that commitment strong.

Do you always work safely? Are you 100% committed to the safety of yourself, your coworkers, friends, and family? Are there times when your commitment to safety is not as strong as it should be? Have you been taking risks and getting away with it? Don't expect your luck to hold. No one ever plans an accident. An accident, by definition, is an unplanned event. No one wakes up in the morning and drives to work thinking, "I will have an accident today so I'd better buckle up." No one ever climbs to the very top of a ladder and knows for sure they won't fall. That's why it's so important to have a personal commitment to safety; a commitment to do the right things to prevent an accident--or minimize the damage done in case an accident does occur.

What is gained by taking a chance? Think about a time when you've risked your personal safety. Have you ever bypassed lockout-tagout procedures? Have you ever driven a car after you had too much to drink? Have you failed to use fall-protection equipment because it was just too much trouble? What did you gain in that situation? A minute of time, an ounce of convenience? Now honestly ask yourself if those gains were worth it. Is a little bit of time or convenience really worth chancing electrocution, a car accident, or a bad fall? Don't sacrifice your healthy future by taking a chance. Every time you're tempted to take a chance with your safety ask yourself if it's really worth the risk. Your family and friends will thank you for making the right decision.

Keeping a strong commitment to safety is not easy. What interferes with your commitment to safety? Is peer pressure a problem? Do your peers think it's silly to take time for safety? You can set a safe example for your peers. Consider taking a stand for safety. By committing to safety 100% of the time, you can help reverse the peer pressure that sometimes causes unsafe behavior. Keep up this exemplary behavior. Someday you may find that the old peer pressure has given way to something new--the respect of your peers earned by setting a safe example.

It's normal for your commitment to safety to fluctuate. Sometimes it's strong, at other times it's weak. Unfortunately, it tends to be strong just after a close call, or perhaps for a few days after you hear of an accident. Then the commitment wanes, only to be strengthened again by another tragedy. Simply recognizing this pattern can help you avoid it. Think about your work habits. Have there been times when you're more likely to take a risk? How about those times when you've been extra careful? Did the strength of your safety commitment depend on an outside event--like another person being involved in an accident?

You can keep your commitment to safety strong by remembering the commitment is for you. If you allow things that happen to other people determine the strength of your commitment, it is likely to fluctuate a lot. You can always learn from things that happen to other people, but to keep your commitment strong all the time, stay focused on your personal safety and those things you do that affect it.

Having a personal commitment to safety and keeping it strong are more important than any safety program, procedure, or rule. In fact, programs, procedures, and rules depend on a strong personal commitment to safety. Ask yourself where you are with your own safety attitude and behavior. Are you 100% committed to safety, 100% of the time? You are? Great! Need some improvement? Promise yourself to work on it--and keep that promise. You'll be glad you did.

## *Understanding Safety Signs*

Signs are used to prevent accidents. They are common in the work area, along the roadside, and in public buildings. OSHA has some specific requirements for signs. The requirements are in place to make sure hazard warnings are easy to recognize and don't vary from workplace to workplace. This week's **Tail Gate Safety Topic** takes a look at different types of signs; what they mean, and how they should be used.

OSHA defines signs as "the warnings of hazard, temporarily or permanently affixed or placed, at locations where hazards exist." Danger signs must only be used where an immediate hazard exists. OSHA specifies their appearance. These signs are red, black (or contrasting color), and white with room for words or symbols to describe the danger. Danger signs are common in areas where high voltages exist and where automatically starting equipment is in use. You may be aware of other hazards, which warrant the use of a danger sign.

Warning signs are orange with black (or a contrasting color) lettering or symbols. They are used to warn against hazards, which aren't quite as serious as those requiring a danger sign-but are more serious than those requiring a caution sign. Warning signs may alert us to forklift traffic or similar hazards.

Caution signs must be used only to warn against potential hazards or to caution against unsafe work practices. Caution signs are predominately yellow with a black (or contrasting color) panel at the top of the sign. The word "caution," written in yellow appears on the panel. The lower part of the sign is used for additional wording, which must be written in black (or a contrasting color). Caution signs warn of numerous hazards-everything from slippery floors to reminding us to wear safety glasses. Even traffic signals take a cue from the yellow caution sign as they warn us to be careful on the road.

Special signs are used just for biological hazards and radiation hazards. The biological hazard (biohazard) sign is fluorescent orange or orange-red with letters or symbols in a contrasting color. The biohazard sign alerts us to the presence or potential presence of blood or other biological hazards. Radiation hazards are identified with a sign bearing the familiar three-bladed radiation symbol in black or magenta or red on a yellow background.

Safety instruction signs are used to provide information about safety. They are not used to warn against specific hazards. These green and white signs remind you to report accidents, help locate first-aid equipment, and direct you along an evacuation route.

Though signs are never a substitute for good safety procedures and training, they are useful to remind us of hazards and ways we can protect against them. Always take seriously the information on a sign-whether in the workplace or on the road. Understanding signs and the hazards they warn us about can help prevent injuries and save lives.

## *Material Safety Data Sheets*

Material Safety Data Sheets, commonly called MSDS's, have come to be very important documents. Every workplace should have readily accessible MSDS's for all the hazardous materials, which are used or stored there. This week's **Tail Gate Safety Topic** takes a look at the content of an MSDS and provides some other important information for using an MSDS.

First of all, the time to become familiar with a material's MSDS is **before** you begin using the material. If you have responsibility for procuring hazardous material, you should obtain an advance copy of the MSDS to review the safety information before the order is placed. Many companies and other institutions require approval of hazardous materials before they are purchased. The MSDS contains information, which is very useful in the approval process.

Once a material is brought into the workplace, everyone who uses it should review the MSDS. You wouldn't want to wait for an emergency to learn about the material's hazardous properties! Suppose the material catches fire. The MSDS specifies fire-fighting procedures for the material. However, your chances of successfully extinguishing the blaze are very small if you waste valuable time running to review the MSDS!

There are also other very good reasons to review the MSDS before using a material. By doing so you will learn what personal protective equipment is required when using the material. You will also learn what conditions to avoid when working with the material, such as heat and sparks. MSDS's also tell you what materials should not be brought into contact with the hazardous material. The MSDS also provides valuable information for storage and disposal of the material.

The information on an MSDS is typically grouped into these categories:

- hazard ratings, such as NFPA (National Fire Protection) ratings
- name and address of the material's manufacturer or importer
- identity; by common name, synonyms, and chemical abstract number of the material
- physical and chemical characteristics, such as the material's appearance, odor, specific gravity, and melting point
- fire and explosion data, such as the material's flash point, explosion hazards, and recommended fire extinguishing media
- physical hazards, such as the material's stability, incompatible material information, and hazardous decomposition products
- health hazards, such as inhalation and ingestion hazards, carcinogen classification, and basic first aid information



- special precautions and spill or leak procedures such as storage, clean-up, and disposal information
- special protection information such as personal protective equipment recommendations

MSDS's contain a wealth of useful information for you to use when working with a hazardous material. Remember, the best time to learn the content of the MSDS is before you use the material. Another thing to be aware of is that mistakes can and do happen. If you are using a material that doesn't seem to fit the description on its MSDS, do not use the material but contact your site's safety personnel immediately. There could have been a mix-up in the labeling or the information on the MSDS. The material may also be out-of-spec and could be dangerous to use as you were planning

MSDS's have proven to be very valuable tools in protecting people from hazards. They provide a wealth of information in a convenient form. But MSDS's are only as useful as you make them. Take the time to review the MSDS's for every hazardous material you use, and apply the information provided in this week's **Tail Gate Safety Topic**.

### *The NFPA's Hazard Rating Diamond*

The National Fire Protection Association has developed a rating system to identify and rank hazards of a material. You've probably seen the colorful labels used to communicate these hazards. The label is diamond-shaped, made up of four smaller diamonds, one each blue, red, yellow, and white. A number or special symbol is placed on the four diamonds. This week's **Tail Gate Safety Topic** takes a look at the meaning of the colors, number, and symbols used on the NFPA diamond.

Many people take one look at the NFPA diamond and give up learning what those colors, numbers, and symbols mean. It's unfortunate, because the system is easy to learn and really useful. One glance at a NFPA diamond label and you have a wealth of information about the material. Sometimes, too, people think the diamond only gives useful information if the material is on fire. This is not true. The diamond's hazard information is valid for the material under normal circumstances.

So what do those colors mean? The blue diamond, appearing on the left side of the label, conveys **Health Hazard** information for persons exposed to the material. A number from 0 to 4 is written in the blue diamond. The higher the number the higher the hazard, as follows:

**0-No hazard.**

**1-Can cause irritation if not treated.**

**2-Can cause injury. Requires prompt treatment.**

**3-Can cause serious injury despite medical treatment.**

**4-Can cause death or major injury despite medical treatment.**

The red diamond, appearing at the top of the label, conveys **Flammability Hazard** information. Again, the numbers 0 to 4 are used to rate the flammability hazard, as follows:

**0-Will not burn.**

**1-Ignites after considerable preheating.**

**2-Ignites if moderately heated.**

**3-Can be ignited at all normal temperatures.**

**4-Very flammable gases or very volatile flammable liquids.**

The yellow diamond, appearing at the right side of the label, conveys **Reactivity** (or Stability) information. The numbers 0 to 4 are also used to rank reactivity hazards, as follows:

**0-Normally stable. Not reactive with water.**

**1-Normally stable. Unstable at high temperature and pressure. Reacts with water.**

**2-Normally unstable but will not detonate.**

**3-Can detonate or explode but requires strong initiating force or heating under confinement.**

**4-Readily detonates or explodes.**

The white diamond, appearing at the bottom of the label, conveys **Special Hazard** information. This information is conveyed by use of symbols, which represent the special hazard. Two of the common symbols are shown here:

**W denotes the material is water reactive**

**OX denotes an oxidizing agent**

Some facilities use the white diamond to convey personal protective equipment requirements when using the material. You may see a picture of gloves, safety glasses, or a respirator in the white diamond.

To determine the NFPA Hazard Ratings for a material that does not have the label affixed, check the Material Safety Data Sheet. NFPA Hazard Ratings are commonly displayed there. Guidebooks are also available from safety supply vendors to assist with this task.

Taking a quick glance at the NFPA label provides a wealth of information. This information is useful to learn the hazards of a particular material and what you should do to use it safely. Follow the warnings on the NFPA label or any label affixed to a container of material. Remember, when you're working with hazardous materials, your safety depends on you.

## ***Toxic Materials***

If you look up the word "toxic" in most any dictionary, you'll find that it means "poisonous." Most people want nothing to do with poisonous materials, but many people work with them every day. In fact, toxic materials have thousands of uses in industry. Many of the benefits we enjoy, such as safe water and food, medicine, transportation, and communications are made possible through the use of toxic materials. This week's Tail Gate Safety Topic explores toxic materials, their hazards, and how to work with them safely.

First, what exactly does "toxic" mean? We already know it means "poisonous," but let's take a closer look. "Toxicity" refers to a material's ability to harm living things. Some toxic materials, or toxins, may irritate the nose, eyes, and skin. Others may damage the body's internal organs. Other toxins may cause suffocation, sterility, cancer or other diseases. Some can be immediately fatal. Some materials don't appear toxic at all to adults, but can seriously damage an unborn child, and others may cause cell mutations, creating abnormalities in future generations. Two things determine a material's toxicity: the amount of the material necessary to cause harm, and the possible extent of the damage.

The potential negative health effects sound awful, and indeed many of them are. But don't forget that thousands of toxic materials are used safely every day. Toxicity research has been done for years, and exposure limits for many toxic materials have been developed. In order for a toxic material to do harm, the body must be exposed to it. Exposure to a toxic material can occur in many ways. The material can be inhaled or ingested, may contact the skin, or be absorbed through the skin or eyes. Slight exposure does not necessarily mean minimal damage-the more highly toxic a material, the lower the permitted exposure.

There are many ways to control exposure to toxic materials. The most common ways are the use of ventilation controls and of personal protective equipment (PPE) such as gloves and respirators. Companies are required to make sure exposures to toxic materials are kept below established exposure limits. They're also required to inform you of the hazards of the materials you work with, and inform you of exposure monitoring results. If you work with toxic materials, make sure you know exactly what you're working with. Follow the instructions of your company's policies and the material's Material Safety Data Sheet (MSDS) for use, storage, and disposal of toxic materials. Make sure you know what PPE is appropriate for you to use-and use it faithfully. If you use toxic materials, always practice common-sense hygiene by washing your hands before you eat. You may be required to wear special clothes or shower after your shift. All of these procedures are designed to help keep you healthy, so be sure you follow the requirements. Of course, if you do have any problems with a toxic material you are using, report it immediately.

Toxic materials can be used safely for many beneficial purposes, but they demand an attitude of healthy respect. You need not fear the toxic effects if you know how to control them properly. Don't learn about toxic material hazards the hard way! Keep yourself healthy. Take the time to learn about the hazards of the materials you work with, and how to protect yourself and others from the danger.

## ***Safety and Ladders - Part I***

There is absolutely no reason for anybody to get hurt, disabled or killed while using a ladder. Yet it happens every single day. Somebody steps on the safety sticker that says, "This is not a step!" and ends up with a broken leg. Another worker puts a rock under one of the legs because the ladder is "just not quite stable enough". On the way to the hospital, it occurs to her, through the pain of her broken arm, that maybe that was not such a good idea after all. On another job, a fellow reaches out just a little bit to far and...well...he's no longer with us. Virtually every single ladder accident could and should have been prevented. It only takes a little bit of common sense, SAFETY SENSE, to prevent an accident from occurring while using ladders. Stick to the following simple rules to ensure that you or your fellow workers are never injured while using a ladder.

1. **CHOOSE THE RIGHT LADDER:** Always select a ladder, which is the correct length to safely reach the working height. Also ensure that the ladder is of the correct duty, or weight rating. The combined weight of the user, their tools and materials should NEVER exceed the rating of the ladder. Most ladders are available with weight ratings of 200, 225, 250 and 300 lbs. Select the right one or GET the right one.
2. **CHECK THE CONDITION OF THE LADDER:** Read all the labels on the ladder then check for split or cracked side rails, missing or broken rungs, loose rungs or other weaknesses. Also check for splinters and sharp edges.
3. **PLACE THE LADDER WITH YOUR SAFETY IN MIND:** Use your head and think safety before you setup the ladder. Make sure the ladder has firm footing and that it's feet are one-quarter the length of the ladder away from the upright surface to be climbed. Don't use a stepladder as a single ladder. If you are using a stepladder, make sure it is fully open with the spreaders properly locked.
4. **CLIMB THE LADDER CAREFULLY.** Keep your mind on where you are and what you're doing. Wear the proper shoes with good soles and that are free of grease or mud. Always face the ladder and use both hands when climbing up or down. Don't carry your tools or materials: raise and lower them with a hand line: *don't have someone toss them up to you or just drop them when you are finished.* If you don't feel well, DON'T climb the ladder. Always climb and work from the center of the ladder. Don't climb up the "back" side of a stepladder and never stand on the top of it.
5. **NEVER OVERREACH! MOVE THE LADDER INSTEAD:** Breaking this one simple rule causes more accidents than you can possibly imagine.
6. **TIE OFF THE LADDER:** Once you have climbed to your working height, tie-off the ladder and use a safety belt.
7. **TAKE CARE OF YOUR LADDERS:** When you are finished with your ladder, put it back where it belongs. Always keep them clean and free of excess material. Store them in a safe and dry place, out of direct exposure to the sun and the elements. Make sure your ladders are tied down during transit. Never paint a wooden ladder. You can however use clear wood preservatives.

Your ladder is one of your most important tools. It is also is one of your most unforgiving if misused or mistreated; so use it safely and wisely.

## ***Safety and Ladders - Part II***

Ladders are one of the biggest hazards of overhead work and result in many accidents. This week's **Tail Gate Safety Topic** expands on *Safety and Ladders - Part I* by again covering certain rules, which must be followed in the selection, use and care of ladders.

As mentioned in *Safety and Ladders - Part I*, always inspect a ladder before using it. Look for:

1. Loose rungs or cleats
2. Loose nails, bolts or screws
3. Cracked, broken, split, badly gouged or worn rungs, cleats or railings
4. Splinters or splinters

You should always select a ladder that is long enough for the work to be done. As a rule of thumb, and to allow for reasonable safety, the ladder should be long enough so that you can work standing no higher than the fourth rung from the top. This allows you to grasp the side rails of the ladder.

The top of the ladder should never extend more than three or four feet above its upper support. Never step on a rung above the upper support since it's liable to make the base of the ladder "kick out."

When climbing or coming down a ladder, always face the ladder and keep both hands free for gripping the side rails.

Wall grips on the tops of risers are useful to prevent sideslipping when the ladder's leaning against a smooth surface. The top and bottom of the ladder should be secured to prevent shifting. Safety feet, cleats, lashing, etc., can be used to make portable ladders secure.

When placing the ladder make sure you don't rest it against a sash or windowpane. A board securely fastened (not nailed) across the top of the ladder will provide a solid bearing at each side of the window.

If you must rest a ladder against a pole, or round column, be sure the upper end of the ladder is firm so it won't slip or cause the ladder to fall. When ladders are used this way, they are less likely to sway or fall if the upper end is equipped with a rung of webbing or similar material.

When carrying a ladder, balance it on your shoulder near the center. Keep the front end of the ladder high enough to clear the top of anyone's head and the back end close to the ground. Be extra careful and keep your mind on where the ladder is in relation to the people and objects around you as you carry it. Pay particular attention when you approach passageways and doorways or any place where your view is obstructed.

NEVER stand a ladder on a box or barrel or any other makeshift objects so as to increase its reach. Another words ALWAYS use a ladder that is the correct height for the work at hand. If you don't have a ladder that is long enough then get one. If you must borrow a ladder be sure to thoroughly inspect it and make sure it is safe.

Before climbing a ladder make sure it is at the proper angle. The recommended angle is about 75 degrees from horizontal. If the base is out too far, the stress on the side rails is more severe and the wider angle can cause slippage. If the horizontal distance is much less than one-fourth of the incline length of the ladder, it is pitched too steep for safe work.

Store your ladders in dry, well-ventilated locations where they are not exposed to the weather or excessive heat or dampness. When stored horizontally, support both ends and at in-between points to keep the middle from sagging, and maybe loosening the rungs or cleats and warping the rails.

Treat wood ladders periodically with a clear preservative such as clear varnish, white shellac or linseed oil. Never paint a ladder because it hides defects and deterioration.

Ladders are necessary and useful tools. Be sure to use yours safely and take care of them when not in use so that they remain useful and SAFE tools.

### ***Safe Use of Compressed Gas Cylinders***

Compressed gases present several hazards. Labels on the cylinder and the Material Safety Data Sheet (MSDS) supplied with the gas tell you about the hazardous properties of the gas; such as toxic, flammable, or oxidizer. In addition to the gas hazards, compressed gas cylinders pose other hazards simply because they contain gas under pressure.

Regardless of the properties of the gas, any gas under pressure can explode if the cylinder is improperly stored or handled. Making a balloon fly around by suddenly releasing the air is amusing, but a flying cylinder is not so funny. The principle is the same for both a balloon and a compressed gas cylinder. Improperly releasing the gas from a compressed gas cylinder is extremely dangerous. Cylinders are definitely not balloons--they are hard and heavy. A sudden release of the gas can cause a cylinder to become a missile-like projectile, destroying everything in its path. Cylinders have been known to penetrate concrete-block walls. To prevent such a dangerous situation, there are several general procedures to follow for safe storage and handling of a compressed gas cylinder:

- Store cylinders in an area specifically designated for that purpose. This area must protect the cylinders from being struck by another object. The area must be well ventilated and away from sources of heat. It must be at least 20 feet away from highly combustible materials. Oxidizers must be stored at least 20 feet away from flammable gases.
- Cylinders must not be dropped or allowed to fall. Chain and rack them in an upright position during use and storage. When transporting cylinders, they must be secured from falling.
- When moving a cylinder, even for a short distance, all the valves must be closed, the regulator removed, and the valve cap installed. Never use the valve cap to lift a cylinder. If you are using a crane or some other lifting device to move a cylinder, use a cradle or boat designed for that purpose. Never use a sling or a magnet to move a cylinder.
- Never permit cylinders to contact live electrical equipment or grounding cables.
- Cylinders must be protected from the sun's direct rays, especially in high-temperature climates. Cylinders must also be protected from ice and snow accumulation.
- Before the gas is used, install the proper pressure-reducing regulator on the valve. After installation, verify the regulator is working, that all gauges are operating correctly and that all connections are tight to ensure that there are no leaks. When you are ready to use the gas, open the valve with your hands. Never use a wrench or other tool. If you cannot open it with your hands, do not use it.

Following these procedures will help prevent accidents. Remember, your safety when using compressed gas cylinders depends on you.

## *Handling 55 Gallon Drums Safely*

In the typical workplace drums are used to store material, to ship it, to dispense it for use, and to store wastes. All these drums must be moved from time to time. Like most things, there's a right way to move a drum-and several wrong ways to do it. This week's **Tail Gate Safety Topic** discusses the safe ways to move a drum. Help prevent injuries by moving drums safely.

At least four serious injuries can occur if a drum is not handled safely:

- fractures
- lacerations
- hernias
- back strain

All these injuries are painful and require a long time to heal. By taking a few precautions before you attempt to move a drum, you can help prevent these serious and painful injuries. Before you move a drum, put on a pair of thick gloves. The gloves will help protect your hands. Also follow this preliminary checklist:

- Check to see how much room there is to move the drum.
- Plan your route in advance. Don't wait until the drum is in motion.
- Check the route for anything that might cause you or your equipment to trip or slip.
- Check the drum to make sure it isn't warped. This could cause the drum to slip.
- Check the drum for burrs, which could cause a laceration.
- Check the drum for liquids, which could cause you to lose your grip.
- Check the bung to make sure it is tight enough to prevent leaks.
- If you are moving the drum using a pallet, make sure the pallet is in good condition.

There are four ways to "break," or initially move a drum from its standing position. These are pulling, pushing, or combinations of pulling and pushing, the drag/pull method and the push/pull method. Pulling is necessary when drums are grouped closely together. Pushing is used when there is ample room to work. The drag/pull method is used when there are tight spots in the area you are "breaking" the drum. The push/pull method is used when drums are located beside a wall.

To pull the drum, grip the near chime with one hand and the far chime with the other. Brace your foot at an angle across the bottom chime. Your hands and feet should form a straight line. Check the position of your fingers for possible pinch points. Now you are ready to pull back on the drum.



To push the drum, place your hands near the chime at shoulder width. Move your shoulders low and close to the drum. Slowly push forward with your legs until you feel the drum reach its balance point.

When using the drag/pull method, place your hands at the near position at shoulder width. Brace the drum with your foot to prevent it from sliding, and shift your weight to the rear foot. Pull and drag it a few inches to the left then to the right.

To use the push/pull method, use one hand to pull the far chime. Use the other hand to push against the wall.

If a drum starts to fall, get away from it as quickly as possible. If the contents spill, follow your worksite's procedures for reporting a spill.

If two people are moving a drum, both people can push the drum, pull the drum, or one can push while the other pulls. When rolling the drum, it is safer for one person to roll it.

To roll a drum, in this case to the left, follow these steps:

- Place your left hand high on the chime and your right hand low.
- Use both hands to roll the drum.
- As your right hand reaches the top, quickly switch the left hand to the top position.
- Lift your hands and place them into position. Do not slide your hands because you may cut or burn them.
- Keep your feet separated and do not slide them. Use the side step.
- Turn your body slightly away from the drum, but not too far away.
- Stay close and ahead of the drum.

When you reach your destination, place the drum in its position using the reverse of the push, pull, drag/pull, or push/pull method.

## ***Using Portable Electric-Powered Tools Safely***

Failing to properly use and maintain electric-powered tools causes thousands of cuts, punctures, pinches, amputations, and electrocutions each year. Tools can seriously injure or kill the user if not properly maintained or used. Everyone who uses tools must learn to recognize the hazards associated with the different types of tools and the safety precautions necessary to prevent those hazards. The Occupational Safety and Health Administration have specific rules for using electric-powered tools. Following these guidelines, along with using your own good judgment will help keep you safe.

### **Before you use a tool:**

- Verify that it bears an electrical test label to indicate it successfully passed inspection and tests for electrical safety within the previous six months.
- Know the application, limitation, and potential hazards of the tool. Operate according to the manufacturer's instructions.
- Inspect the cord for the proper type. Electric-powered tools must either have a three-wire cord with ground or be double insulated. Never use a plug that has its ground prong removed.
- Inspect the tool for frayed cords, loose or broken switches, and other obvious problems. Tools that fail this inspection must not be used. These must be removed from service and labeled "Do Not Use" until repairs are made.

### **When using the tool:**

- Do not use electric-powered tools in damp or wet locations.
- Keep guards in place, in working order, and properly adjusted. Safety guards must never be removed when the tool is being used
- Avoid accidental starting. Do not hold a finger on the switch button while carrying a plugged-in tool.
- Safety switches must be kept in working order and must not be modified. If you feel it necessary to modify a safety switch for a job you're doing, use another tool.
- Work areas should have adequate lighting and be free of clutter.
- Observers should remain a safe distance away from the work area.
- Be sure to keep good footing and maintain good balance.
- Do not wear loose clothing, ties, or jewelry when operating tools.
- Wear appropriate gloves and footwear while using tools.

### **Servicing and storing tools:**

- Never modify a tool to use for a job it's not intended to do.
- Disconnect power tools while servicing or storing.
- Do not wrap the cord around the tool for storage.
- Store tools in a dry place.

## ***Welding - Physical Hazards***

Welding operations can be found in almost every type of industry. Welders must be qualified to do the work, and part of their education includes welding safety. This week's **Tail Gate Safety Topic** discusses the physical hazards of welding and how you can protect yourself from those hazards.

If you are a welder, or work near a welding operation, you may encounter any of these hazards:

### **Excessive Noise - Fire or Excessive Heat - Electrical Shock - Ultraviolet Radiation**

All of these hazards can cause an injury. Knowing how to protect yourself is important. To protect yourself from **excessive noise**, you must wear hearing protection if the noise level exceeds regulatory standards. A noise evaluation should be included in the routine safety evaluation for every job with the potential for noise exposure. If you are required to use hearing protection, use it. Also, make sure you use the right kind of hearing protection. Not every type is suitable for every situation. Most important of all, don't be misled by thinking you don't need the protection because you don't currently have a hearing problem. Hearing loss can happen gradually, and very little can be done to restore hearing once it's damaged. If you are concerned about the noise level in a welding area, report your concern.

**Fire and excessive heat** are hazards with great potential for injury and damage. If welding is done in an area where a fire hazard exists, a welding permit should be used in accordance with established procedures. These permits may also be called hot work permits. These precautions are based on regulatory requirements. In addition, a trained fire watch must be posted to look for fires during and after the welding job. Combustible and flammable materials must be cleared from the welding area. A spark or a piece of hot slag could easily ignite these materials and cause a tragic fire. To protect yourself from burns from these sparks and pieces of slag, wear appropriate Personal Protective Equipment (PPE) such as aprons, gloves, leggings, and footwear.

As with any task involving energized equipment, welding also presents an **electrical shock** hazard. To protect yourself from the electrical hazards, thoroughly inspect your welding equipment before you use it. Be alert for loose connections and damaged components. Make sure electrical equipment is grounded properly each time it is used.

**Ultraviolet (UV) radiation** can cause burns to the skin and eyes. Welding hoods and special welding goggles with UV filter lenses and side shields are designed to protect your eyes and face from UV exposure. Appropriate gloves and aprons must be used to protect exposed skin. Welding curtains may be used for the same purpose to protect others in the vicinity of the welding area. This equipment must be used faithfully for every welding job in order to prevent UV burns. Flash burns to the eyes are extremely painful and can cause permanent damage, including blindness.

You can protect yourself from the physical hazards of welding. Follow company policies for using PPE to prevent hearing loss and UV burns, and follow them consistently. Correct any situations, which pose a fire or electrical shock hazard. If you do have a safety concern about welding hazards, don't let it become an accident waiting to happen--report it to your supervisor or your company's safety office.

## ***Saving Lives with Lockout/Tagout***

The federal lockout/tagout standard published by OSHA in 1989 was designed to prevent injuries and deaths caused by accidental start-up of equipment during maintenance or servicing. OSHA estimates that the lockout/tagout standard saves 122 lives and prevents 28,000 lost workday injuries each year. It's likely that well over 800 lives have been saved since the standard went into effect. That's more than 800 people who still go home to their families, friends, and loved ones; people who are there for the ones who depend on them. The lockout/tagout standard works. It saves lives. Yet unfortunate tragedies do still occur, but many of them could be prevented if the lockout/standard is applied correctly. This week's **Tail Gate Safety Topic** provides a review of the lockout/tagout standard. Remember, the standard can only work if it's used correctly every time.

The lockout/tagout standard requires that hazardous energy sources be "isolated and rendered inoperative" before maintenance or servicing work can begin. These energy sources include electrical, pneumatic, hydraulic, mechanical, thermal, chemical, and the force of gravity. It is important to remember all of the energy sources must be "isolated and rendered inoperative." Overlooking an energy source has proved fatal on several occasions.

In order to "isolate and render inoperative" an energy source, an energy isolating device must be locked in place, or in certain cases, labeled with a tag warning against start-up of the equipment until servicing is finished. Stored energy sources, such as pressure, springs, and electricity contained in capacitors, must be released or "otherwise rendered safe" before servicing the equipment. Every person who will be working on the equipment applies a lock or tag to each energy-isolating device. For complex equipment with many energy sources a group lockout is permitted.

After locks are applied, an attempt to re-start the equipment must be made to verify the equipment cannot be restarted before servicing begins. After servicing, each person who placed a lock or tag must remove it before the equipment is started.

OSHA requires three basic elements in a lockout/tagout program. These are training, written procedures, and inspections. **Training** is required for two types of people-"authorized employees" and "affected employees." Authorized employees are people who do the maintenance or servicing work. They are the people who actually perform the lockout/tagout. Affected employees are people who may be affected by or work near equipment, which is locked or tagged out. Affected employees are not permitted to perform servicing or maintenance work, which requires a lockout or tagout.

**Written Procedures** detailing the lockout/tagout procedure are required for equipment having two or more energy sources. Many companies require written lockout/tagout procedures for every piece of equipment, even those with only one energy source. Written procedures communicate important information to persons performing lockout/tagout. They identify energy sources, provide step-by-step instruction for locking or tagging out energy, releasing stored energy, and verifying the equipment cannot be re-started after lockout is applied. Group lockout/tagout procedures must also be clearly documented. Procedures must be kept up-to-date, and changes must be communicated to everyone who may possibly be affected by them. They are only useful if all the information they contain is correct.

Procedures for performing lockout/tagout must be followed consistently. Don't be tempted to take shortcuts for small jobs, even if the lockout/tagout procedure takes longer than the job itself!

**Inspections** of the lockout/tagout program must be performed annually. The lockout/tagout standard specifies who may perform the inspection. Typically it is an authorized employee who is not directly involved with the procedure being inspected. Periodic inspections provide an opportunity to verify procedures are being followed and correct deficiencies in the lockout/tagout program. Of course, if you are aware of any problems with the lockout/tagout program don't wait for a routine inspection, report them immediately.

These three elements of the lockout/tagout standard work together to keep you safe. Lockout/tagout saves lives and prevents injuries-if procedures are followed consistently and correctly. Never take a shortcut when it comes to your safety, especially when you're working with hazardous energy sources.

## ***LOCKOUT PROCEDURES***

The following procedure establishes the minimum requirements for lockout of energy sources that could cause injury to personnel. All employees will comply with these procedures. All equipment and/or circuits will be locked out to protect against accidental or inadvertent operation when such operation of the equipment and/or circuits could cause injury to personnel. Do not attempt to operate any switch, valve, or other energy-isolating device bearing a lock. Any employee found to be working, or causing others to work on, equipment and/or circuits that, in the opinion of management should have been locked out, will be subject to severe disciplinary actions up to and including termination.

### **Lockout Responsibility**

The primary responsibility for the proper lockout of equipment and/or circuits on a project belong to the project Supervisor and/or Foreman. However, this does not alleviate the field employees from insuring that proper lockout procedures are followed at all times. The Supervisor and/or Foreman will insure that each employee is properly instructed in the safety significance of lockout procedures.

### **Preparation for Lockout of Circuits and Equipment**

Employees will be certain as to which switch, valve, or other energy isolating devices apply to the equipment and/or circuits being locked. More than one energy source (electrical, mechanical, or others) may be involved. The employees will clear any questionable identification of sources with their Supervisor or project Foreman. Before lockout commences, authorization from the customer and project Supervisor will be obtained.

### **Sequence of Lockout Procedures**

**Special Note: In the following steps, when more than one individual is involved with the project and required to lock out the equipment and/or circuits, each employee will place their own personal lock on the energy isolating devices. A lock for each involved is the preferred method for locking out energy sources. If this is not feasible, the designated individual of the work crew (e.g. the project Supervisor or Foreman) with complete knowledge of who is on the crew may be designated by the work crew as the individual responsible for carrying out all steps of the lockout procedure. That individual will inform the work crew when it is safe to work on the equipment and/or circuits. Additionally, the designated individual will not remove a crew lock until it has been verified that ALL individuals are clear.**

1. Notify all affected employees and customer that a lockout is required and the reason therefore.
2. If the equipment is in operation, after obtaining approval, shut it down by the normal stopping procedures.
3. Operate the switch, valve, or other energy isolating devices so that all energy sources (electrical, mechanical, hydraulic, etc.) are disconnected or isolated from the equipment and/or circuits. Stored energy, such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc., must also be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.
4. All affected employees are then required to lockout the energy devices with their individual lock.
5. After insuring that no personnel are exposed and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate. In the event that electrical circuits have been locked out, insure that the circuits are de-energized by applying an appropriate voltage tester that itself has been tested on live circuits. Be sure to return all operating controls to the neutral position.
6. The equipment and/or circuits are now locked out.

### **Restoring Equipment and/or Circuits to Service**

1. When the job is complete and the equipment or circuits are ready for testing or normal service, check the equipment and/or circuits to insure that no one is exposed.
2. When the equipment and/or circuits are clear, remove all locks. The energy isolating devices may be operated to restore energy to the equipment and/or circuits.

### ***How To Use Jacks Safely***

This week's **Tail Gate Safety Topic** deals with one of the easiest pieces of equipment to operate in any industry: the jack. Many people think there is nothing more to operating a jack than to putting it under the load, inserting the handle and jacking away. But every year there are lots of workers who are seriously hurt because they didn't use the jack correctly. To avoid having an accident of your own follow these simple, basic rules:

1. Use a jack with a rated capacity that equals or exceeds the load you're lifting.
2. Always set the jack on a firm and level foundation.
3. To prevent slipping, use a wooden-block softener between the head of the jack and the load.
4. Set the jack perpendicular, at a right angle, to the load.
5. If there is a chance the load will swing to the side, install props or guys before doing any lifting.
6. Have enough help when you install or move a jack.
7. When you're working on a floor of any kind, make sure the load limit of the floor isn't exceeded.
8. Before working under a raised load install blocking to keep the load from accidentally falling.
9. Keep jacks in good shape and well lubricated, but only lubricate at the points where lubrication is specified. Check for broken teeth and other defects. Never throw or drop jacks.
10. When a jack develops any defect whatever, turn it in for repair and be sure to test it under load before putting it back in service.

A jack can slip out from under a load before you have to time get out of the way. Make sure you are using your jack the safe way. By following these simple **Tale Gate Safety Topic** rules you can keep from becoming an accident statistic.

### ***Safety and Scaffolds***

It is safe to assume that just about everybody has heard of a scaffolding accident or two. In many of those cases, faulty design and inadequate construction of the scaffolding was involved but, *in most case*, scaffold accidents are caused by poor maintenance and improper use. To help keep your scaffolds safe, follow these simple procedures:

1. Inspect the scaffolds daily before using them; check the guardrails, connectors, fastening, footing, tie-ins and bracing.
2. Keep platforms closely boarded, fenced and securely fastened.
3. Don't stockpile materials on the scaffolds; remove all materials and tools at the end of the day.
4. Never overload scaffolds. Place the materials being used over ledger and bearer points to minimize platform loading.
5. Don't work on scaffolds during storms or high winds and clear all ice and snow from the platforms before using them.
6. Protect the scaffolds: don't bump or strike against the scaffolds with vehicles or materials and control-hoisted material from the ground with taglines.
7. Keep the platforms and area around the scaffold cleared of debris and unneeded equipment, material and other hazards that will cause a worker to trip or fall.

## ***Driving Safely in Winter Weather***

The leading cause of death during winter storms is transportation accidents. Many accidents could be avoided if drivers took time to learn and practice these tips for driving safely during snowy and icy conditions.

Perhaps the deadliest danger of all is "black ice." Black ice is ice that forms on a roadway, usually due to snow melting and re-freezing. Since it is almost invisible, drivers fail to recognize black ice conditions and may drive at normal speeds-often resulting in very serious accidents. Always be alert to the possibility of black ice when temperatures are near or below freezing. Pavement that looks dry but appears darker in color and dull-looking should alert you to the presence of black ice.

Failing to allow yourself enough time to stop is a major cause of winter driving accidents. During slippery conditions stopping distances can triple. Driving at a slower speed, anticipating stops at traffic lights and intersections, and applying brakes sooner than normal will help ensure accident-free stops. When braking, brake carefully with short, rapid application of the brakes. Always allow plenty of extra space between you and other vehicles to minimize the need for quick stops.

Acceleration, turning, and passing also present dangers during winter. Accelerate slowly to avoid loss of traction and subsequent loss of control. Turn slowly, with caution, to avoid sliding into a stationary object or the path of an oncoming vehicle. Avoid sudden movements. Pass with care because passing lanes are not maintained as well as driving lanes. Again, leave extra space between yourself and other vehicles so there's room to maneuver in case something goes wrong. During a skid, steer cautiously in the direction you want the car to go.

### **Here are some other tips you should remember for driving safely in winter:**

- Always use your seatbelt.
- Turn on your headlights during adverse weather conditions. Overcast skies and falling snow limit visibility. It is important to see and be seen.
- Like all the signs say, bridges and overpasses freeze before the roadway. Use extra caution on these.
- Remember that driving in winter weather conditions causes physical and mental fatigue and reduces reaction times. Get plenty of rest and adequate nutrition. Don't drive while you're sleepy or on medication that causes drowsiness.
- Prepare your vehicle well ahead of time. Check fluid levels; tire pressure, lights, and the battery. Have a mechanic give your vehicle a winter check-up and make any necessary repairs.
- Stock an emergency kit containing heavy clothes and a blanket, traction material such as sand or kitty litter, tire chains, a small shovel, first aid kit, flashlight, jumper cables, and a bright cloth to use as a flag.



## *Driving Safely in Traffic*

When you are driving in traffic, what are some things you must do to avoid accidents? Avoiding accidents in traffic is a little different than avoiding accidents on the open road. Long-distance drivers know that fatigue is responsible for numerous accidents. But what causes accidents when you are driving around town, making frequent stops? This week's **Tail Gate Safety Topic** discusses some of the causes of these accidents and what you can do to prevent them.

Many people spend a lot of time on the road as they are working. On any city street you are likely to see delivery vans, couriers, salespeople, and utility persons making frequent stops as they conduct their business. Some people spend many hours in traffic just going to and from work. Even though the mileage may be small, the amount of time spent on the road is very long. Every hour spent on the road increases your chance of having an accident.

Certainly **speed** is a factor in accidents. Many accidents happen simply because the driver is going too fast. City streets usually have speed limits of less than 25 miles per hour, and often you will see posted limits as low as 5 or 10 miles per hour. Speed limits are carefully selected to minimize the chances of accidents. When traffic is heavy, there just isn't very much distance between you and the next vehicle to stop. The slower you're going, the less distance it will take to stop. By going slowly, you will also be able to observe your surroundings more easily, taking note of cyclists, pedestrians, and other vehicles. Observing the speed limit is one sure way to reduce your chance of an accident. On rainy, foggy, or snowy days keep your speed even lower.

When you make stops, park your vehicle carefully. Avoid leaving it in a space that's likely to block traffic or create a blind spot. As you exit the vehicle look both ways before stepping into the road or onto the sidewalk. You'll want to avoid collisions with other vehicles as well as bicycles and passerby. If you must load things into or out of your vehicle, be sure your load does not obstruct your vision. It is better to make several trips with smaller loads than to overload yourself to the point you cannot see other vehicles. It will also help prevent tripping and falling over objects in your path.

Perhaps the main cause of accidents in traffic is a simple matter of **not paying attention**. In traffic, it is easy to become distracted, frustrated, and annoyed. Any of these can cause you to pay less attention than you should, often resulting in rear-end collisions when the vehicle in front of you stops. Running stoplights and stop signs is also a possibility if you are not paying attention.

Sometimes **paying attention to the wrong things** causes accidents, too. Reading addresses on buildings, street signs, and maps while driving can lead to accidents. You will be better off if you find a place to pull over safely while you read signs and addresses. Even better, try to pinpoint the exact location when you plan your trip--before you begin driving.

**Fatigue** is also a contributor to traffic accidents. After a long day's work, or perhaps a morning when you didn't rest well the night before, you are likely to feel tired. Feeling tired causes you to become distracted easily and also slows your reflexes. Don't take chances driving when you feel too tired to be safe. If fatigue is a frequent problem, see your doctor. For occasional fatigue, combat it with adequate rest, nutrition, and exercise.

To drive safely in traffic you must keep your speed down, pay attention, and avoid driving when you are tired. Following these precautions could prevent many accidents and injuries. Next time you're in traffic, remember these things and keep yourself safe!

### ***Construction Equipment Dangers***

Construction Equipment used on construction jobs often creates dangerous conditions. This week's Tail Gate Safety Topic examines a few situations, which should be watched for at all times.

Any moving equipment such as skip loaders, backhoes, trenchers, cranes, hi-lifts, trucks, you name it, should be respected and avoided. Don't just assume that the operator sees you. You could wind up injured or worse. And don't depend on hearing a horn or an alarm to warn you that moving equipment is near. You may not be able to hear the equipment's alarm over other construction noise.

When you see that equipment is traveling backwards keep out of the way and stand clear until the operator has completed his maneuver. Never cut across the path behind any unit while it is backing. You could easily trip and fall under the equipment. For the same reason you should never ride on the running boards, steps or drawbar or any equipment, even for a short distance.

During backing, the operator should have the project foreman clear the area behind the unit and provide direction. No operator should back a piece of equipment into an area without someone clearing the area and giving signals.

Watch out for swinging counterweights on equipment such as cranes. There is often a pinch-point between the counterweights and some obstruction when the unit swings. Make sure there is enough room for workers to pass and if there is not - shut off the area to any access.

Never ride on or near material that is being transported by equipment. The load could shift and you can be thrown to the ground. Also, clearance may not allow for your position and you can be crushed between overhead or side obstructions.

If you must ride on equipment, make sure that all parts of your body are inside the unit, including your arms and legs. In addition, it is at all possible, get off any portable scaffold or work platform while the unit is being moved. The time it takes to get off will be much less than the time lost if you fall or the unit tips over.

Never walk alongside moving equipment. Keep in the clear in case it slides or turns, or the load shifts.

When you are working near equipment operating in the vicinity of power lines, don't touch or come in contact with the frame of the unit or the load cables. There is always the chance that the boom of the unit may hit the power lines. Warn the operator and the foreman any time you see this possibility and follow their instructions.

Don't walk under loads on cranes and hoists. Always take the path that avoids danger.

Never clean, adjust, lubricate, repair or work on a machine that is in operation. Stop the machine before working on it and replace the guards as soon as it is done and before operation is resumed.

The safest this to do around construction equipment is keep away while the equipment is in operation. If you must be near the equipment, make sure the operator knows you are working nearby and stay alert. Keeping your mind on where you are in relation to the equipment will not only prevent injuries but could save you life.

### ***Back Safety***

The National Institute of Occupational Safety and Health list back disorders in the “top ten” leading workplace injuries published. They account for 27 percent of all nonfatal injuries and illnesses involving days away from work. It's no wonder. Your back is a sophisticated piece of machinery made up of numerous muscles, bones, nerves, and supporting tissues. It's a machine you use every day, probably in ways you don't even notice.

Just like the finest machinery, your back requires proper care to keep it working. If it's not working right, you'll suffer. An injured back affects your ability to move your limbs, your hips, your neck, and your head. Injuries to the back can be very debilitating, causing a lot of pain, time away from work, and often requiring physical therapy or even surgery. Everyone whose job involves stressful lifting or awkward postures is at risk for a back injury. Here are some tips to keep your back in optimum condition:

While lifting:

- Don't bend over an object you are lifting. Bend your knees, squatting in front of the object to reach it.
- Lift the object slowly and carefully, using your leg and arm muscles to lift, not pulling with your back.
- Keep your head up and look straight ahead while making the lift.
- While lifting, keep the object as close to your body as possible.
- Keep abdominal muscles tight while making the lift.
- Use the same techniques when you put the object down.
- If the object is too big or too heavy to lift using these techniques, use mechanical assistance or get someone else to help.

When reaching for objects:

- Do not reach for an object unless you're sure you're strong enough to lift it.
- Use a stepladder to reach objects above shoulder height.
- Avoid awkward stretches while reaching. These stress your back and could cause you to lose your balance.
- Don't depend on structures to support you (e.g., a shelf support, a storage rack, etc.). These could easily give way if you pull or tug on them.

Exercise also plays an important role in keeping your back strong, healthy, and flexible. A properly exercised back is less likely to be injured. Your physician, company medical personnel, or other health-care provider can recommend the best exercises for you, taking into account your physical condition and the type of work you do.

Finally, a word about back belts. There's a lot of controversy about using back belts to control low back injuries in workers who don't have an existing injury. According to a report published by the National Safety Council, available scientific data

does not completely support nor condemn the use of back belts to control low back injuries. One thing that is agreed upon is that back belts should never be a substitute for a comprehensive back injury prevention program. Taking this into consideration, many companies have developed a back belt policy. If you do use a back belt, be aware that you may experience a false sense of security by wearing the belt. You may be tempted to lift loads you wouldn't otherwise lift. Remember, it's your back doing the work--not the belt!

Always be alert for situations that could cause a back injury. Be kind to your back. Don't take unnecessary chances. By following proper lifting and reaching techniques and exercising properly, you'll help keep back problems behind you!

### ***Work Clothes and Safety***

"Clothes To Die For". How many times have we heard that phrase before? But it takes on a bit of a different meaning when we apply the heading of safety to it. How many times has it occurred to you that your clothes may cause you to be injured?

The fact is that the clothes you wear to the job site can effect your safety. A simple example is the length of your pants. If they are too long you can easily catch your heel in them coming down a ladder or trip yourself while backing up.

Although you don't see very many construction workers wearing ties that can catch in moving machinery, you do see a lot of long sleeves, which can pose the same threat as a tie. If your sleeves are long, keep them buttoned at the wrist. Don't roll them up or leave them loose. Also keep your shirt tucked in and your belt tight. This may all sound silly but there are many people who have been maimed or killed because their shirt got caught in moving machinery. Also, it is not a good idea to wear gloves around moving machinery.

Watch your shoes. Make sure they are in good condition and are suited for the job you are doing. Tennis shoes on a construction worker make as much sense as a fireman wearing sandals. Good leather work boots with rubber soles are best for the construction site. In many cases steel-toed boots are a requirement. In cold weather, rubber boots should be worn with woolen inner boots or heavy woolen socks. Never work in wet boots or shoes.

Keep your clothes clean. Clothes that are dusty and greasy can cause skin irritations. Clothes that are soaked with oil and grease can catch fire from a spark or cigarette.

For keeping warm, wool is about the best. Two layers of lightweight wool are warmer than one very heavy layer. Wool absorbs perspiration but if it gets soaked the best thing to do if you can't change clothes is to keep moving. Wool gloves are also warmer than leather or cotton gloves. In cold weather, if you need leather gloves for protection, wear wool-lined leather or wool gloves inside the leather ones.

If you are in cold weather don't play Mr. Macho or Ms. Cool by not wearing enough to keep warm. You are most likely going to wind up sick if you're not careful. Remember that the clothes you are wearing don't create heat; they retain the heat of your body. Make sure that your gloves, shoes, collars and belts are loose enough to allow for circulation. And if you don't have enough to keep warm, some paper wrapped around you chest inside your shirt or jacket makes a good windbreaker in an emergency.

I am sure you have heard the phrase, "Dressing for Success". I guess that might be true in many cases but when it comes to personal protection let's start a new phrase: "Dressing for Safety".

### ***PROTECT YOUR HANDS***

Let's take a minute here to talk about your hands. How would your life be affected if you lost a finger? Not Much? A lot? How about if you lost your thumb? No problem you say? Try using any tool effectively without your thumb. What if you lost a hand? Or both hands? I know of one person's grandfather who lost both of his hands and forearms in a farming accident when he was a kid. While he was a remarkable and successful man, there were many things that people with two good hands take for granted that took him years to master. Like eating with a fork, (he refused to use prosthetics), or dealing from a deck of cards. What would you do if you lost your hands? Think about it. It probably would not be what you are doing now.

All accidents just don't happen, they are caused by not paying attention and by not thinking of what can go wrong before it goes wrong. I am sure that you can think of instances in your own life where you or somebody you know or love was injured because of these simple reasons. The grandfather who lost his hands as a young boy did so because he didn't shut down the threshing machine before he tried to unclog it. You may be shaking your head and thinking that you would never do such a thing. But how many times A DAY do you do something that could result in an accident to yourself or those around you? Someone, somewhere suffers an injury every single day, every single hour and probably every minute.

The construction trades and manufacturing industries are especially prone to hand injuries. There are rough materials to handle, objects to be stacked and stored, tools to be utilized, and equipment to be operated. All pose special risks to hand injury. To come up with a list on how to protect your hands in each and every situation would be impossible. The list would be never ending. Each new advance in technology also advances the opportunities for people to damage their hands and they will, be it by operating a 100-ton press or testing a circuit board.

People usually approach their tasks "at hand" in one of two ways: they either don't think of safety at all before they jump into the task or they think that they "won't" or "can't" hurt themselves. Wrong. They will. If not today then most likely sooner than later. Do the smart thing: Before you begin a project, or take up a tool, or start a piece of equipment, think of the accident that CAN and WILL happen unless you make sure that it doesn't. Apply the "what if" criteria of safety to what you are doing: What if...the knife slips while I am stripping this wire? Will I cut myself? What if...the screwdriver slips off this stubborn screw I'm trying to remove from this box in my hand? Will I punch the screwdriver through the palm of my hand? What if...that pallet of material falls off the forklift while I am holding this gate open? Will my hands be crushed?

Keep your mind on your hands. "Hand Safety Sense" is just plain old' "Common Sense"...use yours BEFORE you loose yours. If your coworker seems to be lacking in common sense then use yours BEFORE they loose theirs. Keep your mind on safety first and your hands will continue to provide you with a way in which to achieve your personal goals.

### ***Protecting Your Eyes***

There really isn't much to be said about protecting your eyes other than you would be foolish not to do so at all times while on the job.

Eye protection devices have been used in the construction industries since 1910. While the original eye protection devices were somewhat limited, today there are eye protection devices for every type of exposure.

While the wearing of eye protection at all times is strongly encouraged, many projects demand that workers wear eye protection. Just a few of these are:

- Chipping, sledging and hammering on metal, stone or concrete
- Use of manual, pneumatic and power impact tools
- Caulking, brushing and grinding
- Drilling, scaling and scraping
- Babbitting, soldering and casting hot metals
- Handling acids, caustics and creosoted materials
- Gas welding, cutting and brazing
- Drilling overhead
- In environments of excessive dust
- Electric arc welding and cutting, and other operations that expose the eyes to flying particles, dust, hot liquids, molten substances, gases, fumes and liquids.

Some people just don't like to wear safety glasses and goggles. One of the complaints is that goggles tend to fog up. Fogging happens when sweat vaporizes and coats the inside of the lens. If you have this problem with goggles and glasses, wear a handkerchief or sweatband around your forehead to keep perspiration out.

Another complaint is that eye protection devices are uncomfortable, but usually this is because the eye protection device does not fit properly. Make sure that you have the device properly adjusted for the correct fit or simply get another that fits better. You can see a lot better out of a properly fitted eye protection device than you can out of a glass eye.

Like all safety devices, eye protection is there for you and your eyes. Be smart and use eye protection at all times when on the job. What have you got to loose? Your sight?

### ***Your Hearing: Keep it for a Lifetime***

Most of us go through life taking our senses for granted. Like touching, tasting, smelling, and seeing; hearing is something we do automatically, without giving it much thought. But when something goes wrong with any of our senses, including our hearing, we expect that medical science have a miracle to offer. Unfortunately, medicine offers only moderate improvement for people with hearing loss. Hearing loss cannot be restored for most people. Lots of people suffer some degree of hearing loss. Farmers, construction workers, people exposed to constant loud noise on the job, whether at home or through their hobbies (even fans of loud music!), have at least one thing in common. They are at risk of permanent hearing loss. This week's **Tail Gate Safety Topic** looks at hearing loss and how it can be prevented.

Exposure to normal noise levels doesn't cause hearing loss. Hearing loss occurs because of overexposure to high noise levels. Noise is measured in units called "decibels." The higher the decibel, the louder the noise. To help you see the difference in the decibel scale, look at these examples of various noise levels:

- **20 - decibels soft whisper**
- **30 - leaves rustling, very soft music**
- **60 - normal speech, background music**
- **85 - heavy machinery with soundproof cab**
- **90 - lawnmower, shop tools**
- **100 - heavy machinery without soundproof cab, motorcycles**
- **115 - loud music, sand blasting**
- **140 - jet engine, shotgun**

In the workplace, hearing protection must be used to reduce noise exposure for any one who is generally exposed to 90 decibels or more over the course of their workday. Hearing protection may be used at lower levels, particularly for people who are very close to the 90-decibel exposure level. Sounds above 120 decibels can cause hearing damage after only a brief exposure and should be avoided unless hearing protection is worn.

Speaking of hearing protection, you've probably seen lots of different types. Keep in mind that not every type of hearing protection is good for every type of noise. Disposable foam earplugs may be fine for some noise exposure. Earmuff-type protection may be suitable for another.

It is the employer's responsibility to assess noise exposures and provide appropriate hearing protection as needed for everyone in the workplace. It is the worker's responsibility to use the protection consistently and correctly. Hearing protection is no use if it's not worn.

Keep in mind that equipment operators aren't the only ones who may need protection. Other people who work nearby may be exposed to too much noise, too. If you work in a noisy area-even if you're not the one making the noise-be aware of the hazard and use protection.

Another thing that might cause unnecessary noise exposure is poorly maintained equipment. Keeping equipment properly lubricated and in good condition helps keep down the noise. If you become aware of noisy equipment that hasn't been noisy before, report the condition so proper hearing protection can be provided until necessary repairs are made.

Away from the workplace hearing protection is your total responsibility. Don't risk your hearing for the sake of a hobby. Keep the music at a reasonable level. It may be hard to admit, but if other people tell you your stereo is too loud, it probably is! If you ride a motorcycle or another noisy vehicle, protect your hearing. In your workshop, use hearing protection that's appropriate to protect against the noise.

Think of those sounds you take for granted and imagine life without them. Don't let unnecessary exposure to noise take them away. You can do something to help protect your hearing. Take the time to know what protection to use and use it faithfully. Your hearing can last a lifetime with a few common-sense precautions.



### ***Look and Live***

Most accidents happen because people just didn't watch what they were doing, where they were walking, where they were standing, sitting, or climbing. This week's **Tail Gate Safety Topic** deals with paying attention and "looking" which is the most important and basic principle of accident prevention.

We've have all heard of the painter who stepped back to admire his work and fell five floors from his scaffolding. It's all right to admire your own work, but it's mighty important to look before you step in *any* direction. You could be stepping into an open stairwell, or off the edge of a platform, onto a pile of lumber, into the path of a moving vehicle or into the way of a swinging load.

On construction projects, in manufacturing plants, in fact in all types of industry, materials and equipment are always being handled and moved about. It is highly important that those working on the job be alert to all such movements. Look up, look down, and look all around, so you'll never walk into the path of a moving truck, an earthmoving machine, an elevator or some other kind of hoisting equipment.

Unique to construction projects is the fact that scrap material and debris is removed from the structure by throwing or dropping it to the ground level. These materials should never be thrown from a structure unless the person doing the throwing first looks to see for sure that no one's in the way. Both in manufacturing plants and on construction sites cranes and hoists move about material and equipment. No one should walk beneath a swinging load if there's any way to prevent it. If it becomes essential to do so, be certain to look before doing so. Being alert to what is going on overhead is highly important to all workers, and one of the best ways to keep alert to overhead conditions is to look up occasionally.

Falls are not unique to construction projects but many people have been killed on construction jobs as a result of falling through false ceilings or temporary floor covering simply because they didn't take time to look where they were stepping. Throughout construction and industry working in poorly lighted areas has injured others, merely because they couldn't see. So, if you work in a poorly lighted place, make a *special* effort to see.

Your eyes are your biggest assets to your work; take care of them so they'll take care of you. When grinding, sawing, welding or doing any type of work of that sort, wear the proper kind of eye protection so that you will always have eyes to look with. And always watch what you are doing. If you keep your

mind and your eyes on what you are doing and where you are, you will never have to explain an accident by saying, "I didn't see" when what you really meant was "I wasn't looking."

### ***What You Can Do to Prevent Cold Stress Injuries***

Winter weather is just around the corner, but did you know cold stress, or "hypothermia," can occur any time of year? In fact, most cases of cold stress develop in air temperatures between 30 and 50 degrees Fahrenheit. People who are exposed to lower temperatures are at risk for injuries ranging from frostbite to serious loss of body heat, which could result in brain damage or death. This week's **Tail Gate Safety Topic** discusses what you can do to protect yourself from cold stress injuries.

**Dress warmly, in layers.** Preserving an air space between the body and the outer layer of clothing will help retain body heat. Choose fabrics such as cotton or wool, which insulate but also allow sweat to evaporate. It is especially important to protect the feet, hands, head, and face. These parts of the body are farthest from the heart and are the hardest to keep warm. Almost half your body heat can be lost through the head, so cover it up as well.

**Keep dry.** Wetness greatly increases the chance of cold stress. Always have extra clothing available if there's a chance you could get wet. Keep your feet dry, they are very susceptible to frostbite.

**Take a break.** You may think it's wise to keep on working in cold temperatures. After all, working makes you break a sweat and you feel warmer. But if you become fatigued during physical activity, your body loses its ability to properly retain heat. This causes rapid cooling which can quickly lead to cold stress. When you take a break, be sure to replace lost fluids and calories by drinking warm, sweet, caffeine-free nonalcoholic drinks and soup.

**Eat right.** A proper diet provides your body with the nutrients it needs to withstand cold stress. A restrictive diet may deprive your body the ability to work well in cold temperatures.

**Don't work alone.** In cold-stress prone environments, a buddy system should be used. Look out for one another and be alert for the symptoms of cold stress.

**Learn what to look out for.** The effects of cold stress may not be apparent to its victim. The first symptoms of hypothermia are uncontrollable shivering and the sensation of cold. The heartbeat slows and may become irregular, and the pulse weakens. As the condition worsens, severe shaking or rigid muscles may be evident. The victim may also have slurred speech, memory lapses, and drowsiness.

Cool skin, slow, irregular breathing, and exhaustion occur as the body temperature drops even lower. This is a serious condition requiring immediate medical attention.

Frostbite can occur without accompanying hypothermia. Frostbite occurs when the fluids around the body's tissues freeze. The most vulnerable parts of the body are the nose, cheeks, ears, fingers, and toes. Symptoms of frostbite include coldness and tingling in the affected part, followed by numbness; changes in skin color to white or grayish-yellow, initial pain, which subsides as the condition worsens, and possibly blisters. Frostbite can cause irreversible tissue damage and requires immediate medical attention.

If you work in lower-temperature environments, always be alert for the possibility of cold stress. Follow these guidelines to help protect yourself from injury. Remember, it doesn't have to be freezing for cold stress to occur. Take steps to protect yourself.

### ***Radiation in the Workplace***

You are probably familiar with a few uses of radiation, like x-rays and nuclear power. But did you know there are lots of ways radiation is used in the workplace? Radiation is used to sterilize health products, to treat cancer and other diseases, to measure the moisture content of soil at construction sites, to locate leaks in pipelines and defects in welds, to make fluorescent bulbs last longer, to make lightning rods work better--the list goes on and on. Radiation is a tool that is used for great benefit to our society. But radiation can be harmful if it isn't controlled. Do you know the hazards of radiation and how to protect against them? In this week's **Tail Gate Safety Topic**, we discuss what radiation is, its hazards, and what you should know if you work where radiation is used.

Many people think radiation is some type of chemical or gas. It isn't. Although some chemicals or gases may be "radioactive"--they emit radiation--radiation itself is simply energy. There are many types of radiation. Some types of energy can be seen or felt, such as visible light and infrared radiation. Some types cannot be detected without special equipment. The type of radiation we will discuss is known as "ionizing" radiation. Ionizing radiation cannot be seen or felt. It must be detected with special equipment. Ionizing radiation, unlike infrared, microwave, lasers, and most ultraviolet radiation, is energetic enough to remove electrons from their orbit about the nucleus of an atom. Ionization changes the atom. If the atom is part of a living cell, those changes could cause a health effect.

You are probably familiar with x-ray radiation. X-rays pass through objects and expose film. Dense areas absorb the x-rays so they appear lighter on film than non-dense areas, which allow the radiation to pass through. This is why x-ray radiation is useful in many applications, from medicine to security to radiography of welds and other critical structures. X-rays are ionizing radiation. Gamma radiation is similar to x-ray radiation. The other types of ionizing radiation are actually small, energetic particles known as alpha and beta particles. Another type of particle radiation is the neutron. All these types of radiation can cause change to the body's cells.

In order for radiation to affect the body, a person must be exposed to it. Radiation exposure may occur from radiation sources located outside the body, known as "external exposure," or it may occur from sources of radiation located inside the body, known as "internal exposure." Internal exposure results

from the inhalation, ingestion, or other uptake of radioactive material by the body. Radioactive material is material, which emits radiation, such as radioactive uranium, radium, cobalt, and thorium.

Health effects of radiation exposure have been studied for years. It is very clear that at high levels of exposure, serious health effects occur. These health effects are destruction of bone marrow, incapacitation of the digestive and nervous systems, birth defects in children born to exposed mothers, and increased incidence of cancer in exposed populations. A localized exposure could result in the loss of a hand or foot. These effects are clearly evident at high exposures such as those produced by an atomic bomb detonation or serious accident involving radioactive materials. However, these exposures are much, much larger than those encountered in the workplace. In fact, the health effects of low exposures, such as those received in the workplace aren't as obvious as those from high exposures. They're really not obvious at all.

Radiation exposure at the occupational level does not cause obvious bone marrow damage or digestive or nervous system effects. It has not been shown to cause cancer or birth defects. Localized low exposures to the hands and feet, and arms and legs do not cause obvious harm. To be on the safe side, information from persons exposed to high levels of radiation has been used to predict possible health effects to persons exposed to low levels. Since high exposures cause a significant increase in the incidence of cancer, low-level exposure may cause a small increase in the risk of cancer. To minimize this risk, occupational radiation exposures are limited to very low levels.

The Nuclear Regulatory Commission, the Department of Energy, or their state radiological control agency regulates companies and other institutions that use radiation. Persons who work with radiation must be trained in radiation risks and radiation safety practices. They are taught to minimize their exposure by using these techniques:

**Time**--Decrease the amount of time spent near a radiation source.

**Distance**--Increase distance between yourself and a radiation source.

**Shielding**--Use appropriate shielding to reduce radiation exposure.

Depending on the type of radiation used, other specific safety rules apply. For example, persons who work with radiography sources must wear an alarming radiation measurement device to warn them when the radiation level exceeds a certain level. They must also never, ever assume the radiation source is shielded without checking it with a radiation detector--at a safe distance from the source. Some of the highest accidental radiation exposures (well in excess of regulatory limits) have occurred in the radiography industry. These accidents have caused serious local injuries and have even been fatal.

Persons with a potential for internal exposure are also taught to use respirators or other protective equipment to minimize their uptake of radioactive material. Some other techniques for minimizing potential internal exposure are:

**No eating, drinking, smoking, or cosmetic application** in areas where radioactive materials are used.

**Check the work area frequently** for "contamination"--radioactive material that has spilled into the work area--and clean it up immediately.

**Use gloves, respirators, and other protective equipment** as required. Use it consistently and don't take shortcuts.

Everyone who works with radiation should also know their institution's radiation safety procedures, including what to do during an emergency.

Radiation need not be feared, and you don't even have to thoroughly understand it to work with it safely. Radiation, like many potentially harmful things, is a very useful tool and can be safely controlled. If you work with radiation, or if you work in an area where radiation is used, learn your company's procedures for radiation safety, and apply the common-sense safety practices discussed in this week's **Tail Gate Safety Topic**.

### ***Preventing Heat Stress***

Hot conditions put your body under a lot of stress. Physical activity stresses the body even more. When heat is combined with physical activity, loss of fluids, fatigue, and other conditions can lead to a number of heat-related illnesses and injuries. Death is even possible. This week's **Tail Gate Safety Topic** discusses ways to prevent heat stress and how to recognize the symptoms of a number of heat-stress conditions.

Heat stress is commonly associated with warm weather. It's true that warm weather increases the number of heat-stress injuries and illnesses. Warm weather isn't the only cause of heat stress, though. Heat stress can occur any time the surrounding temperature is elevated. Even if the weather is cool, you may work in warm areas, indoors or out. Be alert for conditions, which could cause heat stress and take precautions to prevent it. Six main factors are involved in causing heat stress:

- Temperature
- humidity
- movement of air
- radiant temperature of the surroundings
- clothing
- physical activity

Adjusting to these factors and/or controlling them reduce the chance of heat stress.

Your body can adjust to working in a warm environment through a process known as "acclimatization." Check with your company's safety people for the exact way to properly acclimatize

yourself. Acclimatization processes involve gradually increasing the amount of time you spend working in a hot environment. This gradual increase allows your body to properly adjust to the heat.

Keep in mind, though, even if you're already acclimatized, conditions can change which stress your body even more. Bright sunshine, high humidity, and sources of heat in the workplace can affect your body's ability to cool itself. If conditions change, make sure you re-acclimate yourself to the new conditions. If you're away from work for a few days or if you experience a brief period of cooler temperatures while working, you will need to re-acclimate yourself before you try to work the full shift in the hot conditions.

Engineering controls can be implemented to reduce the possibility of heat stress. These include:

- control the heat source through use of insulation and reflective barriers
- exhaust hot air or steam away from the work area
- use of air-conditioning
- use of air-conditioned rest areas
- use of fans to circulate the air
- reduce the physical demands of the work by using mechanical equipment

Administrative controls are also effective to prevent heat stress injuries. These include:

- increase the frequency and duration of rest breaks
- schedule tasks to avoid heavy physical activity during the hottest parts of the day
- provide cool drinking water or an electrolyte-replacement drink and encourage its consumption
- use additional workers for the job or slow down the pace of the work
- make sure everyone understands the signs and symptoms of heat stress

Common-sense precautions, such as dressing properly for the job, include:

- wear lightweight clothing which allows moisture to evaporate quickly
- wear reflective clothing or cooling suits for jobs which require them
- use extra caution if you are required to wear clothing on the job which limits evaporation--you could succumb to heat stress much more quickly

There are a number of types of heat stress injuries. Some are annoying but not very serious. Others can quickly lead to life-threatening situations. Knowing what to look out for is important. This is especially true because the more serious heat stress conditions cause the victim to become disoriented and unaware of their condition. People who are overweight, physically unfit, suffer from heart conditions, drink too much alcohol or are not acclimated to the temperature are at greater risk of heat stress and should seek and follow medical advice.

The major heat stress injuries and illnesses are described here:

**Heat Rash** is caused by a hot, humid environment and plugged sweat glands. It is a bumpy red rash, which itches severely. It is not life threatening but is very annoying. Dry clothes that help sweat evaporate will reduce the chance of heat rash. Washing regularly and keeping the skin clean and dry will help prevent heat rash.

**Heat Cramps** are painful muscle cramps caused by a loss of body salt through excessive sweating. To help prevent heat cramps, drink plenty of non-alcoholic, caffeine-free fluids while working in a hot environment. Check with your doctor about the use of salt tablets. They may be recommended in some cases. Anyone suffering from heat cramps should be watched carefully for signs of more serious heat stress. If the cramps persist or other symptoms develop, seek medical attention immediately.

**Heat Syncope** (pronounced "sin-co-pay") is sudden fainting caused by a reduced blood flow to the head. The victim's skin will be cool and moist and their pulse will be weak. Immediate medical attention is needed in the event of syncope.

**Heat Exhaustion** results from inadequate salt and water intake and is a sign the body's cooling system is not working properly. The victim will sweat heavily, their skin will be cool and moist, their pulse weak, and they will seem tired, confused, clumsy, irritable or upset, they may breathe rapidly--even pant--and their vision may be blurred. The victim may strongly argue that they are okay even with these obvious symptoms. If you suspect heat exhaustion, don't let the victim talk you out of seeking immediate medical attention. The heat exhaustion will affect their ability to exercise good judgment. Until medical help arrives, try to cool the victim and offer sips of cool water as long as the victim is conscious. Immediate medical attention is required. Heat exhaustion can quickly lead to heat stroke.

**Heat Stroke** is the deadliest of all heat stress conditions. It occurs when the body's cooling mechanism has shut down after extreme loss of salt and fluids. The body temperature will rise, the victim's skin is hot, red, and dry, their pulse fast, and they may complain of headache or dizziness. They will probably be weak, confused, and upset. Later stages of heat stroke cause a loss of consciousness and may lead to convulsions. In the event of heat stroke, seek immediate medical attention. Until help arrives, try to cool the victim and offer sips of cool water if the victim is conscious.

Recognizing the symptoms of heat stress is very important, particularly since the victim may not realize what is happening. If you work alone in a hot environment, develop a "buddy system" so someone will check in on you periodically to look for signs of heat stress.

Preventing heat stress is a matter of controlling the factors that cause it. Use the precautions mentioned in this article, and don't hesitate to seek assistance if you suspect heat stress. Your good health depends on it!

### *Preventing Slips, Trips, and Falls*

Did you know that slips, trips, and falls are second only to automobile accidents in causing personal injury? On stairways alone, falls result in almost two million disabling injuries yearly. There are thousands more minor injuries caused by slips, trips, and falls each year. Most alarming of all is the fact that industrial falls cause over 1000 deaths each year. This week's **Tail Gate Safety Topic** discusses what can be done to prevent slips, trips and falls. Most of the suggestions in this article can be used on the job and at home.

Slips occur when there is too little friction between a person's feet and the walking surface. Many factors can cause a slip. Ice, oil, water, cleaning fluids, and other slippery substances are probably the most obvious causes. However, the flooring may be inappropriate-perhaps it is a slick material-or the person who slips may not be wearing proper shoes. To prevent slips, avoid walking in areas, which pose slipping hazards if at all possible. Always promptly clean up spills of slippery substances. Better yet, prevent the spills in the first place. If an area is a chronic problem, re-route foot traffic in order to avoid it. If flooring is a problem, replace it or coat it with a non-slip surfacing material. Always follow your company's safe shoe policy. Most safe shoe policies require a slip-resistant sole.

Trips occur when a person's foot contacts an object and they are thrown off balance. The main cause of tripping is obvious--anytime something is in a walkway it could cause someone to trip. Another culprit is an object which projects into the walkway--perhaps material stored low on a shelf. Poor lighting and uneven walking surfaces also cause tripping. Prevention of trips is simple but does require diligence. Keep objects that could cause someone to trip out of the way. Repair uneven flooring and install proper lighting if required.



Falls can be caused by a number of things. Slips and trips frequently result in a fall. Falls also occur for other reasons. Improper use of ladders and scaffolding can result in a fall-usually a very serious one. Falls also happen when people climb objects without using fall protection equipment. Don't risk serious injury by taking shortcuts. If you are working on a ladder, scaffold, or other elevated platform, make sure you know the requirements for using them safely. Always use fall protection equipment when it is required.

Slips, trips, and falls cause numerous injuries every day. But they are among the easiest hazards to correct. Take the time to look around your worksite for these hazards and work to prevent them. Take care not to cause any slip, trip, or fall hazards as you go about your daily activities. Don't let a slip, trip, or fall keep you from enjoying all that life has to offer.

### ***Working Safely in Confined Spaces***

Do you ever work in a confined space? There are many types of confined spaces-tanks, silos, pits, tunnels, pipes; boilers-the list goes on and on. No matter what the type, confined spaces have something in common. They have limited ways to get in and out, and the atmosphere within them could be dangerous. This week's **Tail Gate Safety Topic** discusses what you should know to work in a confined space safely.

A confined space is a space that has these three characteristics: It has limited openings for entry and exit, it is large enough to permit a worker to enter, and it is not designed for continuous worker occupancy. The characteristics of a confined space cause it to present unique hazards. Yesterday's miners knew some of the dangers of a confined space. Have you ever heard about the canary that died? Miners once took a bird into the mine. When the bird died, the miners knew the atmosphere within the mine was getting dangerous. The death of the bird told the miners it was time to leave. Today we have more sophisticated ways of testing the atmosphere within a confined space, but the principle is the same: Check the atmosphere to make sure it's safe to work in the confined space.

Confined spaces present many dangers-some of which the miners of yesterday never knew. These are some of the common ones:

- lack of oxygen, presenting a suffocation hazard
- fire or explosion hazards from an accumulation of flammable vapors
- health hazards from toxic vapors

- difficulty exiting the space in the event of an emergency
- cramped spaces to work in, resulting in a danger of being caught in equipment
- poor visibility
- high levels of noise
- temperature extremes

Regulatory agencies require workplaces to have a plan for working in confined spaces safely. If you work in a confined space, you should know your company's procedures for safely entering into the space and working in it. Confined spaces should be identified and classified, and safe entry procedures developed. Some confined spaces are called "permit-required confined spaces," meaning a permit is required for entry into the confined space. In addition to the normal characteristics of a confined space, permit-required confined spaces present one or more of these hazards:

- has the potential to contain a hazardous atmosphere
- could contain material capable of engulfing someone entering the space
- has an internal configuration such that a person could be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers off to a smaller cross section (e.g., a grain silo)
- contains any other recognized serious hazard

In general, these are the things you should be aware of before you enter a confined space:

- know how to enter it safely
- know how to exit quickly
- know that the atmosphere in the space is tested and found to be free of dangerous levels of toxic or flammable vapors, and that there is sufficient oxygen
- know that the atmosphere within the space is going to remain safe while you are working
- know the rescue plan in the event of an emergency, and make sure the proper rescue equipment is available and in good condition
- know that another person outside the confined space is keeping an eye on you as you work, and that they know the rescue plan, too
- know what other procedures are necessary to follow to work safely, such as locking out energy sources

Another very important thing to remember is what to do if someone working in a confined space becomes ill or injured. In the event of such an emergency, you should never enter a confined space to rescue someone without the proper equipment, training, and atmospheric testing. Chances are, whatever caused the illness or injury will claim you as a victim too.

It is possible to work safely in a confined space, but it's a task that requires careful planning and preparation. Don't be tempted to take shortcuts when it comes to confined spaces. Follow all safety precautions and don't hesitate to speak up if you are unsure of the correct procedures. You play the most important role of all when it comes to working safely. By consistently following safe work procedures and not taking chances, you will be working safely for a long time to come.

### ***Industrial Ergonomics***

You've probably heard the term "ergonomics" before. It's a relatively new field of study concerning how a person interacts with the working environment. "Ergonomics" is a broad field, but the basic goal of an ergonomics program is injury prevention. This injury prevention is accomplished by fitting the job to the worker instead of fitting the worker to the job. This week's **Tail Gate Safety Topic** takes a look at ergonomic concerns in the workplace, and what you can do to prevent injuries caused by poor ergonomics. Many of the suggestions in this topic can be adapted for use outside the workplace, helping you to prevent injuries at home.

Injuries arising from poor ergonomic conditions typically involve the bones, muscles, joints, tendons, and nerves. Symptoms of these injuries are:

- painful joints
- pain, tingling or numbness in hands or feet
- pain in wrists, shoulders, forearms, knees, etc.
- back or neck pain
- fingers or toes turning white
- shooting or stabbing pains in arms or legs

- swelling or inflammation
- stiffness
- weakness or clumsiness in hands
- burning sensations
- heaviness

These symptoms could also be the result of other medical conditions, so check with your doctor if you are concerned about any of these.

The good news is that ergonomic problems can usually be solved by simple, common sense solutions. Improving your position while you work can prevent injuries that are caused by awkward posture. Any time you must twist your body, work overhead, kneel, bend over, or squat you increase your risk of an injury. Repetition of these movements further increases your chance of injury.

Occasional awkward posture is probably no cause for alarm, but if you find yourself repeatedly bending, stretching, and twisting, making some simple adjustments to the work environment can solve the problem of awkward posture. Your workstation may need some adjustment, or the materials you use in performing your job may need to be re-arranged to eliminate bending, twisting, and other awkward movements. Store frequently used materials in front of you at waist height. Heavier objects should not be placed overhead but they don't have to be on the floor, either. Place them at a level so they are easier to lift. Use of mechanical lifting equipment may also be possible.

Repetitive motion tasks can also lead to injuries. If your job requires you to make the same motions repeatedly, consider learning the correct posture for the job. Check with your company's safety department for ideas on reducing injury from repetitive motion tasks. You may find that there is equipment available to use, which will reduce your chance of injury. However, don't depend only on a back or wrist brace to protect you. Your best prevention is to maintain the correct position for the task, take recommended breaks, and do any recommended exercises to help prevent injury.

Some other causes of ergonomic injuries are:

- sustained muscle exertion, which reduces blood flow to the muscles and causes muscle strains and sprains
- contact stresses, which are injuries that occur due to repeated contact with a hard surface
- extreme temperature, which can reduce sensitivity to pain and reduce blood flow
- vibration, which can reduce blood flow and sensory response

In some of these cases it may not be possible to make a simple adjustment to overcome the problem. Engineered controls may be the best solution, so check with your safety department. There are factors within your control, however. Sometimes you may be tempted to use your body itself as a tool. Have you ever used your hand or foot to kick or pound an object? Have you ever taken a shortcut and neglected to use the right piece of equipment to do the job? You may have substituted your hands for a vise, your knee for a ram, or your back for a hand truck. All of these situations put you at risk of an injury. That shortcut could cost you a lot of time and unnecessary suffering. Think twice before you use your body as a tool. It will thank you for it!

This week's **Tail Gate Safety Topic** has discussed the symptoms and causes of injuries caused by poor ergonomics. Being aware of the causes of injuries is the first step in preventing them. As you work, take a look around you at the situations, which could cause an injury and take steps to correct them. Fitting the job to the person is not a difficult thing to do, and it will help keep you working injury-free for a long time to come!

### ***Good Hygiene on the Job***

There's more to good hygiene than being clean. When you're working with chemicals or other hazardous substances, the word "hygiene" takes on a meaning beyond smelling good and looking nice. The goal of good hygiene on the job is to prevent accidental exposures caused by inhaling or ingesting hazardous substances. This week's **Tail Gate Safety Topic** discusses the seven major good hygiene practices. By consistently practicing good hygiene when working with hazardous substances, exposures caused by accidental cross-contamination can be prevented.

**Smoke, eat, and drink only in designated areas away from areas where hazardous materials are used or stored.** Small amounts of the substances may be present in the area, and smoking, eating, and drinking nearby will cause you to inhale or ingest the hazardous material. You should always wash before smoking, eating, or drinking if you have been working with hazardous materials.

**Keep work clothes clean and in good condition.** Holes or tears will allow hazardous materials to get on your clothes or skin, increasing the likelihood that you will be exposed to the substance.

**Do not mix contaminated clothing with your home laundry.** Not only will cross-contamination occur, but it is possible to cause a fire if these clothes are laundered. Find out what to do with your

contaminated clothing before you leave work. Many companies have an industrial laundry facility specifically for contaminated clothing.

**If you splash hazardous materials on your eyes, skin, or clothing, wash promptly in the proper manner, even if you have no apparent symptoms.** The MSDS will provide information about what to do in case of splashes. Of course, the best time to look at the MSDS is before you use the substance, not when an emergency happens.

**Always wash before you apply makeup, lotion, lip balm, or gloves.** Applying these to contaminated skin is likely to cause an accidental exposure.

**Remove contact lenses when working in an area where vapors are present.** Contact lenses absorb substances from the air, causing eye irritation and other potentially serious conditions.

**Keep hazardous material storage areas clean.** In case of a spill, the area should be cleaned according to proper spill control and clean-up procedures. Materials used to clean up the spill must also be disposed of properly.

These practices help keep hazardous materials away from and out of your body. None of them are difficult to do. Perhaps the hardest thing about practicing good hygiene on the job is to overcome bad hygiene habits. After all, no one usually notices a health effect right away if they eat or smoke in a hazardous materials area. Gradually, bad habits replace good ones. Over time, because of chronic exposure to hazardous materials caused by these bad habits, a health effect may appear. If you are aware of any personal bad hygiene habits, the key to changing them is to remember that, in the long run, your good health is at risk because of the bad habit. Begin to change those bad habits today!

### ***The Right Way to Use a Portable Fire Extinguisher-Part 1***

Do you know how to extinguish a fire? According to OSHA regulations, no one at a workplace is supposed to use a fire extinguisher unless they have been trained to do so. Though this may seem awfully restrictive, there are several good reasons for this rule. If an untrained person tries to extinguish a blaze, some serious mistakes can happen. Any of these mistakes can cause the fire to become worse, or injure or kill the individual. This week's Tail Gate Safety Topic features instructions on proper use of portable fire extinguishers.

There are four things to remember when it comes to using a fire extinguisher: **Use Your Judgment, Communicate; Ready the Extinguisher, and Use It.** You must also know what to do if your efforts fail.

**Use Your Judgment** --When you see smoke or fire you should use your own good judgment before you decide to extinguish the blaze. Ask yourself these questions:

- Is the fire limited in size and spread?
- Will you have an escape route if something goes wrong?

- Do you know the location of the nearest fire extinguisher?

If you are confident the fire is controllable and your safety is ensured, attempt to put it out. If the answer to any of these questions is *no*, evacuate the area immediately.

**Communicate** -- Once you have decided to extinguish the blaze, make every reasonable attempt to tell at least one other person what you are doing. This person should report your activity to someone else as soon as possible.

**Ready the Extinguisher** -- You must select the proper extinguisher. Fire extinguishers are classified according to the type of fires they extinguish. It is very important to use the proper extinguisher. Some extinguishers are rated for more than one class. Some are for only one type of fire. Just be sure the extinguisher you're using is rated for the fire you're extinguishing.

Class A: Use on ordinary combustibles such as wood, cloth, paper, rubber, and many plastics.

Class B: Use on flammable liquids such as gasoline, oil, grease, tar, oil-based paint, lacquer, and flammable paint.

Class C: Use on energized electrical equipment including wiring; fuse boxes, circuit breakers, machinery, and appliances.

Class D: Use on flammable solids such as magnesium.

In part two we will discuss the remaining steps to **Ready the Extinguisher**, as well as how to actually use the extinguisher and what to do if your attempts to extinguish the blaze aren't successful.

### ***The Right Way to Use a Portable Fire Extinguisher-Part 2***

In part one we discussed the first steps in using a portable fire extinguisher. We reviewed **Use Your Judgment, Communicate**, and part of **Ready the Extinguisher**. The next steps to **Ready the Extinguisher** are these:

#### **Ready the Extinguisher --**

- Quickly but carefully remove the extinguisher from its mounting bracket. It may be heavy, so use caution when lifting it.
- Stand about six feet from the fire.
- Extend the nozzle toward the fire.

**Use It** -- Once the extinguisher is ready, you are ready to release the extinguishing agent. This must be done properly. For example, if you squeeze the handle before you have aimed the nozzle properly, valuable time and extinguishing agent will be wasted.

A technique to remember for using an extinguisher is published by the National Fire Protection Association (NFPA). It is known as the **P.A.S.S. Technique**.

The **P.A.S.S. Technique**:

**Pull** out the pin that secures the handle.

**Aim** the extinguisher nozzle at the base of the fire.

**Squeeze** the handle. (Do not be startled by the noise or velocity of the agent as it is released.)

**Sweep** the agent stream from side to side across the base of the fire until it is completely out. Be alert for re-ignition. If this happens, douse the fire until the extinguisher is empty.

Once the fire is out, back carefully away from the scene. This will enable you to know immediately if the fire re-ignites.

Knowing how to use a fire extinguisher the right way is an important skill. Sometimes, though, in spite of your best efforts, your attempt may fail. The last point to remember about using a fire extinguisher is what to do if your efforts fail. It is really quite simple. If you cannot extinguish the blaze or it recurs repeatedly, **evacuate the area immediately**.

The best time to familiarize yourself with potential fire hazards in your work area is before a fire happens. Knowing the hazards that exist, and what types of fires could occur are critical skills to working safely. You can also use this knowledge to make sure the proper type of fire extinguisher is available should the need arise.

### ***What To Do In Case Of Fire***

Most fires start out small, but after a few minutes they can be out of control. It's important to act fast to sound the alarm and just important to know what to do and to do it fast. This week's **Tail Gate Safety Topic** deals with what to do in case of a fire.

**THINK FAST AND ACT WITH CAUTION:** When you first discover a fire determine what to do immediately. If the fire is small and you have the proper fire extinguishers, **PUT IT OUT**.

**SOUND THE ALARM:** Do not underestimate any fire. If the fire is too much for you to handle, report it immediately.

**WARN THE PEOPLE:** Warn all people in the area immediately so they can get to places of safety. This is especially important in the case of fires in buildings.

**STAND BY:** Stay near, but at a safe distance from the fire. Meet and tell the fire fighters where the fire is. They can waste valuable minutes if they have to find it themselves.



**FIRE FIGHTING:** Everyone is responsible for preventing fires. But everyone is not obligated to fight major fires. In general, never join in the fire fighting unless the firemen request your help.

**CORRECT EXTINGUISHERS:** Different fire extinguishers are recommended for each type of fire. For **CLASS A** fires (wood, textiles, rubbish) use foam or water. For **CLASS B** fires (grease, motor vehicle, flammable liquids) use foam, dry chemical, carbon dioxide or vaporizing liquid. **NEVER** use a water-type extinguisher on live electrical equipment. The electrical current following the water stream to you body can electrocute you instantly. **NEVER** throw a stream of water on a **CLASS B** fire. You can splatter flaming liquids over a wide area, spreading the fire out of control.

To summarize what we have covered here you should adhere to the following guidelines:

NO MATTER WHERE YOU ARE, KNOW WHERE THE FIRE EXTINGUISHERS ARE AND HOW TO USE THEM CORRECTLY SO THAT YOU WILL BE ABLE TO ACT QUICKLY.

KNOW WHAT TO DO AND DO IT QUICKLY

ACT SAFELY AND WITH CAUTION

SOUND THE ALARM

WARN OTHERS IN THE AREA

STAND BY TO DIRECT THE FIREFIGHTERS TO THE FIRE

STAY BACK AND OUT OF THE WAY UNLESS YOU ARE ASKED TO HELP

If you follow these simple guideline you may be able to put out a small fire or at least keep a small fire under control.

### ***Flammable Liquid Safety***

Flammable liquids are used in many different ways. They present unique hazards to the people that use them. Flammable liquids can cause a fire or explosion, and like many other substances, they can also cause serious health effects from overexposure. This week's **Tail Gate Safety Topic** takes a look at flammable liquid hazards and discusses ways to use them safely.

Flammable liquids are liquids with a flash point of less than 100oF. The flash point is the lowest temperature at which a liquid gives off enough vapor to form a flammable mixture with air. On the NFPA diamond label, a fire hazard rating of three or four denotes a flammable liquid. Other labels used to identify flammable liquids are red with appropriate wording and they usually contain a fire symbol.

The vapors of a flammable liquid often present the most serious hazard. The vapors can easily ignite or explode. Flammable liquid vapors are heavier than air and may settle in low spots, or move a significant distance from the liquid itself.

The explosive concentration of vapors in air has a lower and upper limit. The lower explosive limit, or LEL, is the lowest concentration that will ignite. The upper explosive limit, or UEL, is the highest concentration that will ignite. If the vapor concentration is between the LEL and UEL, there is serious risk of fire or explosion.

To minimize the risk of ignition of the flammable liquid or vapors, follow these precautions:

- Always check the MSDS for the material you're using to understand the specific hazards involved.
- Store flammable liquids in cool, well-ventilated areas away from corrosives, oxidizers, and ignition sources.
- Label all containers and cabinets with appropriate "flammable materials" signs.
- Never smoke in an area where flammable liquids are used or stored.
- Minimize the amount of flammable liquids used.
- Use only approved safety cans to store flammable liquids.
- Ground and bond flammable liquid containers to prevent static charge buildup.
- Never pour flammable liquids down a drain or sink.
- Dispose of empty flammable containers in an approved manner.
- Wear appropriate personal protective equipment such as splash aprons and goggles when handling flammable liquids.

Flammable liquids also present health hazards from overexposure. The MSDS for the material you're using will list the allowable exposures. Overexposures to flammable liquids can cause a variety of effects.

**Inhalation** of flammable liquids can cause irritation to the respiratory passages, nausea, headaches, muscle weakness, drowsiness, and loss of coordination, disorientation, confusion, unconsciousness, and death.

**Skin contact** with flammable liquids can cause the skin's oils to be removed, resulting in irritated, cracked, dry skin, rashes, and dermatitis.

**Eye contact** with flammable liquids can cause burning, irritation, and eye damage.

**Ingestion** of flammable liquids can irritate the digestive tract, cause poisoning, and death.

Appropriate personal protective equipment (PPE) can help prevent exposure to flammable liquids. Use PPE faithfully to protect your good health.

Flammable liquids are used widely in many workplace and home situations. Careless mistakes and safety shortcuts lead to serious problems when it comes to flammable liquids. Their hazards are deadly. Flammable liquids deserve a healthy respect for their dangers. When you use them, be on guard against the hazards. You can prevent problems from occurring by using your good sense and following the MSDS precautions, and the instructions contained in this week's Tail Gate Safety Topic.

### ***GETTING READY FOR RAINS AND FLOODS, PART 1***

In recent years, storms in California have become more intense and longer lasting. Flash floods, mudslides, high coastal surf, stream and creek flooding, snowstorms and avalanches have all occurred in this state-claiming lives and damaging property. The worst storm in 100 years is predicted to hit the west coast this winter. Here are some storm survival tips:

1. Know your area's flood risk in relation to nearby streams, flood control channels, bays and other waterways. (Federal officials report that more that 25 percent of all flood damage nationwide are for structures outside identified flood plains.)
2. Run water through the gutters to find any obstacles diverting water to your business or home.
3. Secure items stored outside.

4. Remove rotted trees, broken branches or branches too close to building so windows aren't broken.
5. Inspect areas in your workplace and home that are subject to flooding. Identify records and equipment that can be moved to higher locations.
6. Run water over your roof to find any leaks.
7. Keep on hand materials like sandbags, plywood, plastic sheeting, lumber and shovels.
8. Explore permanent flood proofing measures for your workplace and home including:
  - Filling windows, doors and other opening with water resistant materials.
  - Reinforcing walls to resist water pressure.
  - Building water walls around equipment and work areas that are susceptible to flooding.
  - Constructing floodwalls outside the facility to keep floodwater away.
9. Establish warning and evacuation procedures for the workplace and home. Make advance plans for assisting employees or family members who may need transportation.
10. Make sure all first aid kits are stocked.
11. Have emergency food, water and supplies on the premises. (Same items you would have on hand for an earthquake.

### ***BEWARE THE TIGER***

Safety rules are a nuisance. They restrict you from doing what you want to do in the way you want to do it. You would think that the person who wrote safety rules must have been an old fuddy-duddy who couldn't stand to see people having fun--that they sat down with their aching corns and wrote the safety rules much the way some musicians compose music at one sitting. Such is not the case: Safety rules were written with the splinters of human bones dipped in human blood.

The rules began to be written before people even began to think. They perhaps were what started them to think in the first place.

People crawling around in the prehistoric age had no safety rules; they had no language either. They noticed that a furry looking animal with yellow stripes was eating their spouse and children. They had a thought (their first one): "That beast not friend," then a second thought: " That beast enemy!"

Then came the first invention in the history of humankind -- they made a safety rule: **"Beware of the Tiger."**

The first safety rule was perhaps just a screech emitted in the same key every time a tiger was sighted. It was annoying to the people who had to stop doing whatever they were doing and go climb a tree or crawl under a rock. It was annoying, but the tigers began to get skinny, and people became more numerous.

Following the same line of thought, they decided that the lion, too, was an enemy and invented a different screech for the lion and another safety rule.

People who were annoyed at having to run for their lives now for the first time knew from why they were running, without first having seen it.

The tragic thing about safety rules is that they were slow in being made. The people had to be eaten by the tiger and the lion before the rules came into existence.

How much nicer it would have been if the person who invented the emery wheel also made a sign at the same time and hung it over the machine saying, "Wear goggles but not gloves when using this machine." Think of the countless mangled hands and sightless eyes and lives lost during the interval between the invention of the grinding wheel and the hanging of that annoying safety sign above it!

In the event that an accident should befall you, it is conceivable that the person the company has to train to take your job will be a better worker than you; or that the person your widow marries will be a better person than you; or your children's stepparent will be better for them than you.

But -- why put it to a test? The person who gains the most by following a safety rule is you!

### *Getting Ready for Rains and Floods, Part 2*

When it come to safety, it's better to plan for the worst and hope for the best. Just in case the original predictions were correct, the following information tells you what precautions to take during and after the storm.

#### **WHEN YOU RECEIVE A STORM WARNING**

- Store drinking water in closed, clean containers. Water service may be interrupted.

- If flooding is likely and time permits, move items to upper floors.
- If advised to leave the premises, cut off all electric circuits at the fuse panel by pulling the main switch or disconnect all electrical equipment.
- Shut off gas service at the valve next to the meter and turn off the water service at the main valve.

### **DURING THE STORM**

- Avoid areas subject to sudden flooding.
- Do not try to cross a flowing stream where water is above your knees.
- Do not try to drive over a flooded road. You could be stranded and trapped.
- If your vehicle stalls, abandon it immediately and seek higher ground. Many people drown while trying to rescue their cars.
- Do not "sight see" in areas where flooding or snowfall is occurring. Do not try to enter areas closed by local law enforcement agencies, the Sheriff or California Highway Patrol.
- Avoid unnecessary trips. Advise others of your destination.
- Use the telephone for emergency needs or to report dangerous conditions.
- Beware of downed power lines or broken gas lines. Report them immediately to your local gas or electric utility company police or fire department.
- Stay tuned to one of your local radio or television station for emergency information.

### **AFTER THE STORM**

- Do not turn the gas back on yourself. Call your local gas company to do it for you.
- Use flashlights, not lanterns or matches to examine buildings.
- Make sure drinking water is not contaminated.
- Do not handle live electrical equipment in wet areas. If electrical equipment have been in
- contact with water; do not use them until local authorities or a licensed and qualified electrician tells you they are safe.
- Continue to beware of downed power line or broken gas lines

### ***Kids and Car Safety***

In honor of Mother's Day, we offer this special topic about keeping kids safe in and around cars. Today's kids are very mobile, often riding in the car several times each day. Most trips go without incident. Sometimes there is a close call, perhaps a quick stop or a near miss when another driver is careless. Tragically, accidents do occur. On average in the US, three children die each day from car accidents. Another 260 are injured. Many of these deaths and injuries could be prevented. This week's **Tail Gate Safety Topic** presents ways to help keep kids safe in and around cars and other vehicles.

Fatal accidents have been known to occur at slow speeds, even in driveways. Children are small, and if they are approaching a car the driver probably won't see them. Tragically, children have been killed in their excitement over the arrival of a visiting friend or relative. They forget the dangers and run up to the car before it stops. Teach your children never to approach a vehicle, even if they think it is standing still. They will need to be reminded of this often! Watch your children closely if they play on driveways and sidewalks, and be alert for cars pulling in and out of the driveway.

Parking lots pose other dangers. Drivers will probably not be able to see a small child. Always hold a small child's hand when walking through a parking lot. Older children should be warned of the dangers of a parking lot, too. Kids are easily distracted and forget about safety. In their excitement over a shopping trip or some other excursion, they may forget that cars are around and their safety is in danger.

Avoid the temptation to leave your kids in the car while you tend to a quick errand. True, it can be a hassle to deal with car seats and fussy kids--you may even have to wake up a sleeping baby--but take the kids in with you. Why chance your children's safety? There are lots of things that can happen. Unattended children have been abducted in parking lots. Kids have started the car and caused accidents while they were left unattended. They've suffered heat stress because of the extremely rapid rise in temperature inside a car on a hot or sunny day. They have also been known to leave the vehicle and go searching for their parent when the "quick errand" took longer than expected. Perhaps the worst story is a case where an unattended car caught fire and small children were trapped inside. So don't leave your kids in a car by themselves, the consequences could be severe.

On the road, be sure to use a car seat as required by your state's law. Generally, infants weighing up to 20 pounds must ride in a rear-facing car seat. Children between 20 and 40 pounds must ride in an approved forward-facing seat. Though they're not usually required, booster seats are a good idea for children between 40 and 60 pounds. Older children must be taught to always wear their seatbelt and wear it properly. Disabled children may need other protection. Check with your child's physician for specific advice.

When using a car seat, always follow the manufacturer's instructions. Be sure to consult your car owner manual for additional information about car seats. Some cars require special hardware, such as a locking clip, to ensure the seat stays secure in the car. You should not use a car seat that has been involved in an accident. The seat could be structurally damaged and no longer provide proper protection. Avoid using second-hand seats. They could have been involved in an accident or have missing parts, which render them ineffective at protecting your child.

Be consistent in the use of the car seat. Some parents use car seats only for long trips. Actually, most car accidents occur within 25 miles of home. Since you never know when an accident will happen, use your car seat correctly every time. While you are traveling, do not remove a child from a car seat or allow seatbelts to be unbuckled. If your child needs to get out of the car seat or the seatbelt for any reason, wait until you can safely pull off the road. Holding a child on your lap will not provide protection even in a minor accident. The force of a collision can easily loosen your child from your grasp.

Airbags have been the subject of much discussion lately. If your car has a passenger side airbag, the safest place for your child is in the back seat. Never place a rear-facing infant carrier in a seat with an

airbag. In a crash, the airbag could strike the back of the car seat with enough force to injure or kill the baby.

Injuries and deaths can be prevented if car safety rules are followed and followed consistently. Don't chance your child's safety. Follow the precautions for car safety discussed in this week's **Tail Gate Safety Topic**. If you have other questions about child safety and cars, your local police department can help. Your child's pediatrician also has helpful information on the subject.

### ***Safety In Your Home and Workshop***

Since June brought with it Father's Day and lots of opportunity to try out new gadgets in your workshop, we offer this special **Tail Gate Safety Topic** as a reminder to put safety first around your



home! Many of the industrial-oriented safety topics on this site can be applied to the home. Interestingly enough, safety principles such as lock-out/tag-out and hazard communication can help to prevent injuries from occurring at home. Read on for more ideas about hazardous materials and electrical safety around the home!

Most everyone's garage, workshop, basement, kitchen, and bathroom contain hazardous materials. Read the label on most any household-use chemical and you'll see a warning statement. Be sure to follow the label's instructions for using the material. There may be need for ventilation when using the substance. It may be important to keep the material at a certain temperature, away from extreme heat or cold. Keep in mind that mixing certain substances together (e.g., bleach and ammonia) can cause dangerous reactions.

Keep hazardous materials away from children at all times. If the unthinkable happens and the material is ingested, call poison control immediately, even if the label gives first-aid information. Have the container handy so you can provide accurate information to poison control.

Practice hazard communication at home. Don't remove warning labels from hazardous materials or place materials in an unlabeled container. If you allow older children to work with you, make sure you tell them of the hazards of these materials. Providing this information will start them on the right track to safety.

Electrical hazards may also be present in the home or workshop. Inspect your electric wires, appliances, and power tools frequently and have them repaired if necessary. Avoid the temptation to modify a power cord, plug, or outlet to accommodate outdated tools. For more information on power tool safety, see the article on the **Tail Gate Safety Topics** page.

Overloaded circuits present another problem. If you find your outlet receptacles are few and your electric needs are many, invest in an upgrade of your home's electric service. The investment is well worth eliminating the risk of electric shocks, fires, and damaged tools and appliances.

Principles of lock-out/tag-out can be applied at home to isolate energy sources and prevent inadvertent start-up of equipment. When working on electrical equipment, wiring-even changing a light bulb-shut off the electricity. Don't risk a shock. Other applications of lock-out/tag-out include turning off equipment such as lawn mowers, shredders, and snow blowers before you service them. This is especially important if the equipment has become jammed and you are trying to dislodge an object.

This week's special **Tail Gate Safety Topic** has provided suggestions for safety around the home. The home is full of potential dangers, but with a little common sense and a lot of commitment these dangers can be eliminated. Practice safety at home and on the job. You'll be setting a great example for the rest of the family to follow!

#### *Holiday Safety*



From now until New Year's Day there are all sorts of things to celebrate. Unfortunately, decorations, food, and alcohol all present dangers, particularly to young children. A few common-sense precautions can help keep your holidays safe and happy.

Candles, colored lights, Christmas trees, artificial snow, and plants add a lot of beauty to festive occasions. Unfortunately, young children (pets, too!) often like to play with these. Kids may even try to taste these lovely decorations, or experiment with that candle flame. Make sure decorations are kid-safe or out of reach. Watch out especially for small ornaments, button batteries, and festive yet poisonous plants such as mistletoe, poinsettia, and Jerusalem cherry. (Hard or chewy candy can choke children, so keep it away from them, too.)

Candles are also popular, but don't let yours go up in smoke! Speaking of candles, have you ever let one get too close to some greenery, paper, or a tablecloth? You know what can happen. Keep an eye on those candles. Never leave them burning unattended, and never place them too close to other objects. (Light candles only in containers meant for lighted candles--many candles are not meant to be lit in their original, usually decorative, containers.) Keep those lighters and matches out of children's reach, too.



If you use outdoor lights, make sure they're approved for outdoor use. For indoor and outdoor lights, inspect them for broken or missing bulbs, and check the cords for fraying before you use them. Don't place cords where they can trip people, and don't run them under furniture, rugs, carpeting or other objects, or around doors and windows.

A crackling fire in the fireplace is a welcome sight. Keep yours safe. Make sure the fireplace and chimney are clean when you begin using it each year. Call a professional to clean and inspect your flue. Keep the area in front of the fireplace free of combustible material, and use a screen to keep sparks from flying out. Again, keep young children and pets away from the fireplace.

There's plenty to eat during the holiday season. Unfortunately eating food that isn't prepared right or that has been sitting around too long can turn happiness to misery. Food borne illness can make you very sick. It can also kill. You should always be aware of food safety precautions and follow them no matter what time of year. If you are hosting a celebration, be sure to follow safe handling, cooking, and re-heating practices, especially for meats and eggs. These precautions can usually be found printed on the food packages and in published literature, such as cookbooks or health department brochures. Don't take a chance by eating food that is not fully cooked, seems to have been sitting out too long, or that contains raw eggs--not even cookie dough! The risk of serious illness is just not worth it.

Many holiday celebrations include alcohol consumption. If you do drink, never drink and drive. Watch out for guests and make sure everyone is riding with a sober driver. Provide plenty of alternatives to alcohol such as soft drinks, coffee, tea, and cocoa. Stop serving alcohol a few hours before your party ends. Also, never leave drinks around where youngsters and pets can get them. Alcohol can make them very sick. Collect used glasses and cups quickly and lock up your supply.

Finally, make sure your home is equipped with smoke detectors and, if your home uses a fossil fuel heat source, carbon monoxide detectors. Test the batteries frequently--some people find it helpful to replace the batteries twice a year when Daylight Savings Time begins and ends. If your home has been

vacant for several days test the detector batteries when you return. The low-battery alarm may have sounded while you were away and could be silent when you return. The battery may be dead and you won't know unless you check. Don't let accidents spoil your holidays. Plan now to play it safe this year and every year.

*Happy Holidays!*