



Toolbox Talks



III

IEC National Safety Committee • Integrated Electrical Services • Jack Otting



IEC's Official Safety Partner

TOOLBOX TALKS III is brought to you from the IEC National Safety Committee, with contributions from IES (Integrated Electrical Services), Jack Otting, and CNA Insurance Company, a partnership committed to safety for over 20 years.



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August 2016

To The Supervisor

Your job in management embraces many duties—and not the least of these is your responsibility for safeguarding the well-being of the workers in your charge. No other obligation is of greater importance than this. As a foreman, it is your duty to police your workers and your job. You are to be on the alert, at all times, for unsafe conditions and unsafe actions. You are to take immediate remedial action when necessary.

As added insurance to an effective safety program, it is imperative that you talk to your workers, from time to time, on safety performance. We would suggest that you try to do this at least once a week, and to assist you in this phase of your operation, these short bulletin-type talks have been furnished. The last pages provide space to record dates and talks given.

You are not expected to be a finished orator. You should, however, make it clear that you have the courage of your convictions—and that you intend to do everything in your power to protect your workers and the equipment in your charge from accident and injury.

Teach your workers to think SAFETY—it just might save their lives!

How to Give a Toolbox Talk

Communication is one of the best ways to prevent accidents. One of the best ways of communicating the importance of safety on the job is through toolbox talks. You don't have to be a professional speaker to give a good toolbox talk. However, there are ways you can make your talks more effective. Let's take a look at them:

The Agenda

Know your topic and plan your agenda a few days before the meeting so you're well prepared. Be able to present the talk without reading it and lead a discussion afterward. Wherever possible use actual equipment to illustrate your points. Coordinate hand out literature or other material you intend to use at the meeting. Limit the length of your presentation. Generally, 30 minutes per session is adequate, with 15 minutes for questions and answers at the end.

Use visual examples. The old adage "seeing is believing" is true, and visual examples can make your presentation more powerful. If you are talking about ladders, have one handy so that you can point out such things as loose rungs or split rails. If you plan to talk about tool safety, show a few samples. Consider a chisel with a mushroomed head or a hammer with a split handle. Do a wrap-up. Reinforce the important points brought out during the meeting. Thank your staff for their interest and enthusiasm.

The Format

Start the meeting out on a positive note. After welcoming your staff, promote teamwork and the fact that toolbox meetings provide valuable information and they give everyone the opportunity to exchange ideas. Be sure to compliment a job well done.

Keep it informal. Even though you may be using this resource, as well as others, use your own words in making the actual presentation. For effective results, do what is comfortable for you.

Invite people to participate. The purpose of toolbox talks is to get people to think about safety problems. Have your people name hazards and what to do about them. Encourage them to offer suggestions to improve safety. When asking questions, use open ended questions instead of questions that require only a yes or no answer.

The Topic

Choose only timely topics. Gear your talks to safety problems you are currently encountering or anticipating.

1. Review recent injuries.
 - a. What was the violation?
 - b. What hazard did it create?
 - c. What injury could it have caused?
2. Review recent safety violations.
 - a. What happened and why?
 - b. What should have been done?
3. Review the upcoming work schedule.
 - a. What hazards are you concerned about?
 - b. What safety equipment should be used?
 - c. What procedures should be followed?

The Time and Place

Hold the meeting in your work area. We recommend holding the meeting first thing in the morning or following lunch when you are least likely to be interrupted. Holding a toolbox talk once a week will reinforce your company's philosophy that job safety is important.

We hope your toolbox talks help you in the daily operation of your business. Keep them handy. Like any tool, they can't help unless you use them.

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General Safety



Near Miss



Don't Shrug Off a Near Miss

How many times have you shrugged off a near miss? Never gave it a second thought? Next time, think twice. The difference between a near miss and an accident often is a fraction of a second or an inch. And when it happens again, that difference may not be there.

We Never Know When the Serious Injury is Next

One study shows that for every 330 incidents of the same type, 300 produce no injuries, 29 produce minor injuries and one produces a major injury. (Of course, these statistics vary with the job being done.) The problem is we never know which time the major injury will occur. Near misses are warnings. If we heed these warnings and look for causes, we may be able to prevent injury or damage.

Here's an Example

You're working at a construction site, and it has rained. The crew places boards on the ground to help workers walk over the muddy paths. Later, you're going up one path into a building. Your foot slips. Being agile and empty handed, you regain your balance with no harm done.

Another person comes along. He slips, but his reactions are a little slower than yours. To keep from falling, he jumps off the board. Again no harm done.

Then comes a third person carrying a load. He has the same experience, but falls off the board with the load on top of him. He breaks his ankle.

Two warnings were ignored. Finally, someone was hurt. Now the loose cleat, sand, or mud on the board is discovered and the condition corrected. We've locked the barn after the horse has been stolen. Two men saw the thief lurking around, but failed to take action.

Whenever You See a Near Miss,

ASK “WHY?”

Suppose you’re walking toward a suspended mason’s scaffold. You see a brick fall, but hear no warning shout. Ask yourself: “Why did it fall? Was it kicked loose? Is a tow board missing?” Then correct this condition if possible. If not, report it to someone who can.

Keep the Right Attitude

Never take the attitude that a miss is as good as a mile. The next time, it may be the last mile for you or a fellow worker.



Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Save Your Hands



Here's a test to see how fast you can untie your shoes. You can use both hands, but you can't use your thumbs. Not so easy, is it? And, yet, do you realize that 25% of all disabling injuries involve hands and fingers?

Common Causes of Hand Injuries

What are some of the common causes of injuries to hands and fingers, most of which usually are preventable? They include struck by hammers, pinched between objects being moved, cut by sharp objects, pierced by splinters and slivers, burned by hot objects or chemicals, and caught in moving machinery.

Gloves—a Prime Means of Protection

As long as your skin remains unbroken, it can keep germs out. Once it's opened by a scrape or cut, however, germs can get in and infection can result unless you get proper treatment. And, no matter how rugged you think your hands may be, they aren't tough enough to stop splinters, slivers, or to resist punctures.

That's why gloves are important. They're like an extra layer of skin. The nail that rips your glove would have injured you if your hand had been bare.

Wear gloves whenever you are handling rough or sharp material. Use rubber gloves when working with chemicals, solvents, or other material that can irritate your skin. Wear gloves that fit properly. Also, remember that gloves shouldn't be worn when there is a possibility they can get caught in moving machinery.

Guards Are Hand Savers

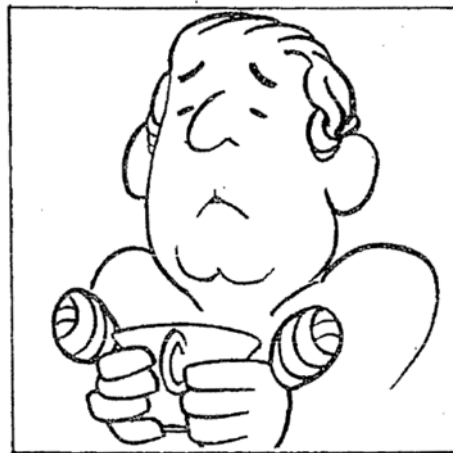
Guards on power saws and other equipment sometimes seem like a nuisance, always getting in the way. But they're on the equipment to protect you against injury. By removing guards or otherwise making them ineffective, you increase your chances of getting hurt. Tie one hand behind your back for a day and you'll appreciate what the consequences of working without a guard can be.

Other Dangers

Many hand injuries occur even when you are wearing gloves or using guards. Be alert to these dangers, too. Such injuries can result from the unexpected shifting of material, getting hands caught in pinch points, grabbing moving parts of machinery, or holding work in the hands that should be held in a vise or securely clamped.

All Thumbs Better Than No Thumbs

You may sometimes complain about being all thumbs. But remember how difficult it can be to work without them.



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Accidents Before and After



Don't Wait until an Accident Happens

Too often hazardous conditions come to our attention only after someone is hurt or seriously injured. If you see an unsafe act or unsafe condition, don't ignore it and gamble on you or a friend not getting hurt.

If you notice someone working in an unsafe manner, let that person know. You could be preventing a serious injury. Wouldn't you expect someone to have the same consideration of you? Or, if you see an unsafe condition, correct it. If you can't, report it to your Supervisor.

After an accident happens, there usually is a lot of talk and excitement. Then it is written up, becomes a statistic, and is too soon forgotten.

Accident Investigation

Fortunately, some good can come out of every accident. Investigations can produce information we can use to prevent a similar mishap from occurring in the future. Some persons, however, mistakenly believe that accident investigation is used to put the blame on someone. And so they refuse to cooperate.

If You See an Accident...

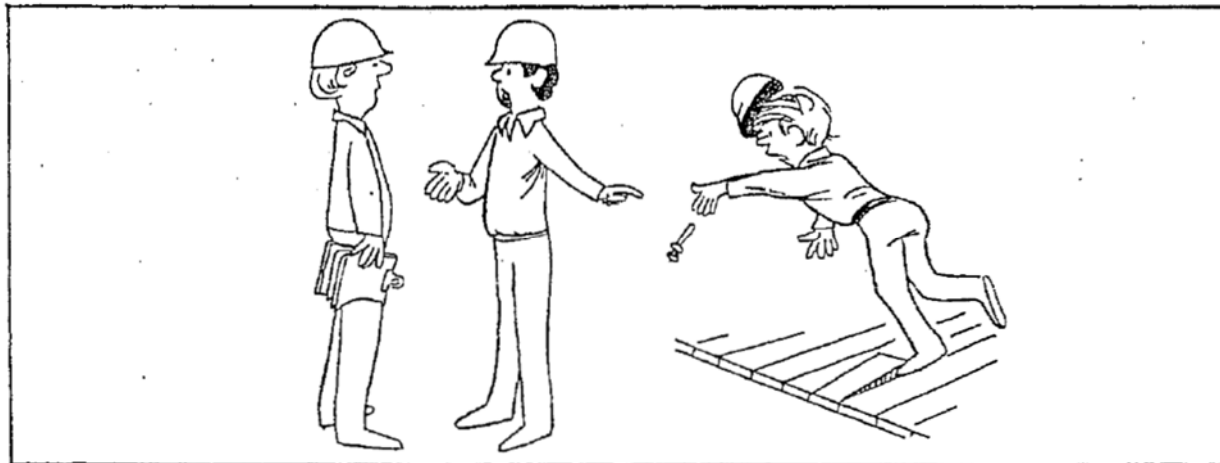
Make a mental note of everything that occurred and the condition that existed before the accident. Ask yourself the following questions:

1. Where was I and others within my sight when the accident happened?
2. What was I doing?
3. What equipment was involved?
4. Where was the injured person and what work was being done?
5. What was the sequence of events?

Imprint these things on your memory. Remember, others were in a different position and may not have seen things as you did.

Cooperate in the Investigation

When the investigator asks questions about the accident, give the facts as you saw them. If you omit or change information to protect someone, how can we accurately determine the causes and help prevent the same thing from happening again? Next time you may be the victim.



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Horseplay



Practical Jokers Aren't Welcome on This Job...

...nor is anyone who encourages them. It's not that we don't have a sense of humor. But we also have a sense of responsibility toward keeping our employees safe.

Most Practical Jokes Aren't Funny

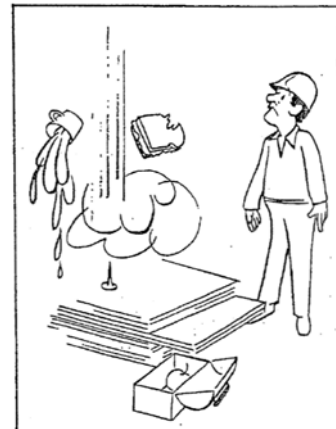
Take the guy who thought it would be hilarious to sneak up on a friend, give him a quick blast on the neck with an air hose, and watch his reaction. When the air hit the man, he jerked around instantly. The blast entered his ear, broke the drum and ruined his hearing.

Not Innocent Fun

Some states criminally prosecute the practical joker who causes injury or death. They have ruled that the consequences are not the result of an accident, but of a deliberate act. Most practical jokes are not as innocent nor as much fun, as some persons would like to pretend.

Stop and Think

If you are tempted to play a joke on someone, don't. On a construction job, any kind of horseplay is dangerous.



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Kids and Construction

Don't Mix



All of us want to be liked. There's no doubt about that. But it's sometimes difficult to be a good guy when it comes to protecting kids from the hazards of a construction site.

Draws Kids like a Magnet

A construction site draws kids like a magnet. Most of them have played with toy trucks or dozers. And, suddenly, there in front of them is the real thing. Many kids have tried for hours to get a piece of heavy equipment started, with no success. Then that night a bunch of kids visited the site. They not only got the equipment started, but smashed it into another piece. Fortunately, no one was hurt.

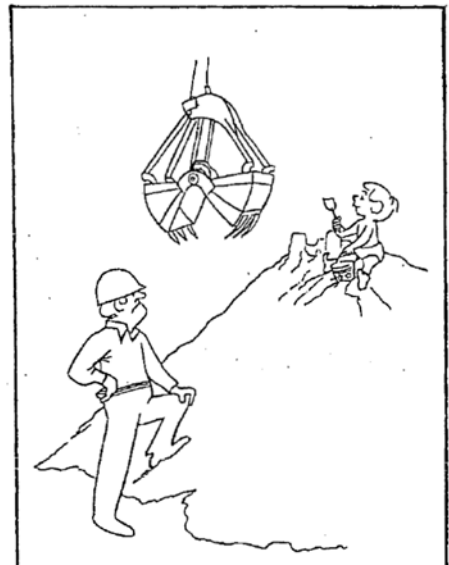
Vandalism

Another danger of kids hanging around is that some of them engage in vandalism. And often as they size up our operation, they're scheming about what they can do when no one's around. Like smashing windshields or pouring sand into gas tanks.

Be Firm but Diplomatic

So, when it comes to kids and construction sites, we sometimes may have to appear like the bad guy. Not only for our own protection, but for that of the kids as well. When dealing with kids, remember: if you give them an inch, they'll take a mile. So forget about saying: "Maybe" or "OK, but be careful." Let your "no" mean "no." But don't go overboard. Don't be so rough with the kids that they'll come back and get even.

No, construction sites aren't playgrounds. And the day may come when you'll have to point this out to local youngsters. Do it diplomatically, but firmly.



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Shortcuts



Taking Shortcuts is Common Practice

Everyone takes a shortcut at one time or another. Kids jump the fence instead of using the gate. Pedestrians cross streets between intersections. In many cases, a shortcut involves danger.

Break the Habit

If you have the habit of taking dangerous shortcuts, break it. In our work it can be deadly.

An iron worker who tried to cross an opening by swinging on reinforcing rods slipped and fell 20' onto a concrete floor. If he had taken a few moments to walk around the opening, he'd still be tying rods.

Avoid Dangerous Situations

If you are told to go to a particular work area, the Company expects you to take the safe route, not the shorter, more hazardous one. The Company, however, can't be a guardian angel sitting on your shoulder. Avoiding dangerous shortcuts is up to you. And it's your responsibility to warn anyone else you see taking them.

What if There's No Safe Way to Get There

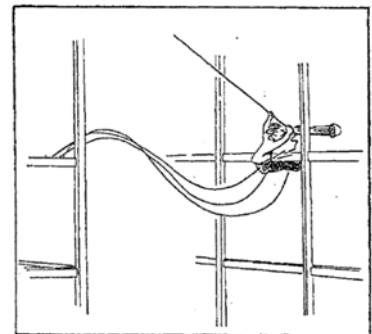
Let me know. And I'll see that the necessary means of access is provided.

Shortcuts More Dangerous at Heights

Even though the job may take but a few minutes, don't climb on falsework or an improvised platform. Use the ladder or scaffold. And don't go from one elevation to another by climbing a column or sliding down a rope. Ladders, steps, and walkways are built to save your neck as well as for your convenience. Use them.

Remember

The safe way isn't always the shortest way. But it's the surest way by far.



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Clothing for Construction



There's one industry where today's fashions just don't make it. That's construction. Fancy duds are likely to get caught or snagged and cause you to fall or to get hurt in some other way. Your clothing should not only be appropriate, but rugged enough to stand up to the use it'll get.

Keep Your Shirt On

Always wear a heavy duty shirt, preferably long sleeved with the cuffs buttoned at the wrist. Don't wear it loose or baggy. Keep it tucked in to avoid shagging.

Your shirt will protect you from sunburn, so keep it on even when the weather is hot. It also will protect you from scrapes and from skin-irritating material, such as concrete water and poison ivy. Don't wear anything around your neck that can dangle and get caught in machinery.

No Baggy Pants

Wear straight-line pants of proper length without pocket flaps or cuffs. They should not be baggy or so long that your heels get caught in them.

You probably can't keep your pants up without a belt. If your belt is too long, cut off the extra length or run it through additional belt loops. In this way it won't get caught and pull you into machinery.

Leave Jewelry Home

One of the most common causes of amputated fingers is wearing jewelry, such as rings, wrist watches and bracelets. It may look nice, but if it gets caught in machinery, you're in for a painful experience.

Put Your Best Foot Forward

Different jobs call for different kinds of footwear, but, generally, properly fitted, high-top safety boots should be worn. They give you more support than other boots and more protection in case you drop something on your foot. Wear rubber boots when working in wet material, especially if it's deep. Spreading concrete is a good example.

Winter Wear

During cold weather, two light, wool shirts are better than one heavy one for warmth. Gloves and hard hat liners are also advisable in cold weather.

Dress Right

When you dress for construction jobs, remember that you're not out to model the latest fashions. Your work clothes may not make you the sharpest dude on the block, but you'll look a lot better than you would if loose clothing or jewelry caused you to get caught in a machine.



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Comments: _____



Off-the-Job Safety



Off-the-Job Safety is Your Responsibility

We do all we can to protect you on the job: post safety signs, erect guards and barricades, issue protective equipment, and make work areas as safe as possible. But off-the-job safety is up to you.

Your Safety Off the Job, However, Is Important to Us

It's not easy to replace good employees—even temporarily. So when you get hurt, we suffer, too. And besides that, we hate to see anyone injured on the job or off.

Driving Safely is One of the Best Ways to Keep from Getting Hurt

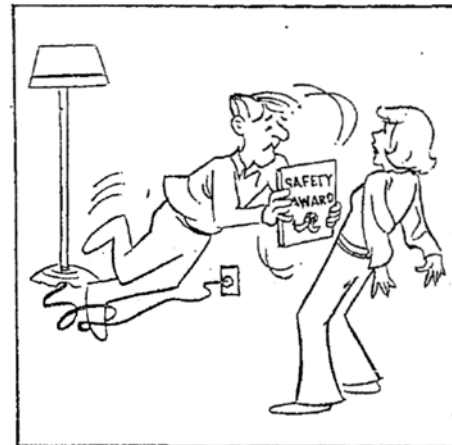
I know you've heard all the rules and regulations before. And I won't repeat them. The easiest way to keep from getting hurt is to drive defensively at all times. If another driver tries to cut you off, don't argue. Learn to protect your life instead of your ego.

Take Your Safety Practices Home with You

You wouldn't think of working without eye protection where it's required on the job. So why go without it in your workshop? You wouldn't use damaged or worn tools at work. So why use a mushroomed headed chisel or a taped up hammer at home?

Don't Overlook Safety during Recreation Either

Did you ever notice how many injuries happen when people are skiing, playing tennis or relaxing with a little backyard baseball? Don't overdo it when it comes to recreation. Don't try to keep up with the kids when you're no longer one yourself. And, that goes for anyone over 20.



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Comments: _____



Weather



Why Talk about the Weather?

Actually, we have no control over rain, snow, sleet, wind, lightning or sunshine. But we can control what happens on our job as a result of the elements. Some of the biggest problems on construction jobs are caused by wind and lightning. Wind probably causes the most accidents; lightning can be deadly.

Watch Out for Wind

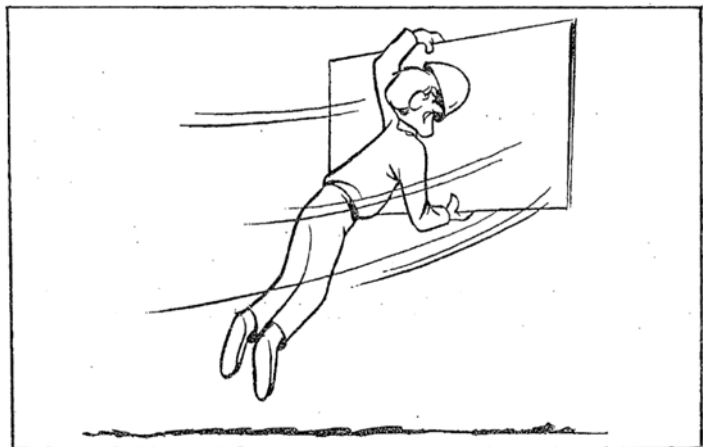
Don't let the wind catch you off guard. I'm not just thinking of tornadoes or hurricanes, but of everyday winds and unexpected gusts. Wind just loves to pick up anything it can and sail it away. So when it's windy, securely tie or weigh down supplies and materials.

It's amazing what a little wind can do. Some gusts can pick up a 4 x 8 sheet of plywood from the top of a high-rise building and carry it several blocks or blow you off a scaffold.

On one occasion, the wind blew empty 50-gallon drums off a 15-story building. One drum went through the roof of a tool shed. What would have happened if the drum had landed on you? You'd have had more than a giant sized headache.

It seems the higher you go, the stronger the wind. When working on tall buildings, stay away from roof edges, floor openings, and similar drop-offs where the wind could blow you over. Weigh down or otherwise secure material or equipment that can be blown down.

Don't loiter on the leeward side of unbraced walls, lumber stacks or anything else that can be blown over by a sudden gust of wind. In many instances, workers have been seriously injured when an unbraced wall or form was blown over on them while they were sitting in its shade during lunch or before starting work.



Lightning Hurts

Every so often we read about workers being struck by lightning. They usually come out second best.

Recently a hook-up man was electrocuted when lightning struck the crane boom while he was holding on to the hook preparing some materials to be lifted.

We all like to keep things moving until we're rained out. But when lightning is around, it's safer to take shelter early. Very often an electrical storm occurs without rain. Or a lightning storm proceeds the rain. So if you're working with a crane, on top of steel framework, or around other projecting equipment or a building, the safest thing to do is to seek shelter when you see lightning.

You'll be reasonably safe from lightning inside the structure, particularly when it's equipped with lightning rods. You'll also be fairly safe in an automobile or truck. But never take shelter under an isolated tree or where you're in contact with a tractor, crane, or other equipment. If you get caught out in the open, stay as low as you can. It's much safer to be down in a ditch than on top of the ground.

Rain Can Ruin a Job

Rain may be good for the farmer but it can play havoc with a construction job. It can turn it into a gigantic mud pie. Water seems to get in everywhere. Rain can ruin building materials and supplies and generally make things downright messy. Steel gets slippery, equipment gets stuck, and we get wet.

By covering equipment, materials, tools, supplies and ourselves, we don't give rain a chance to do as much damage as it could. We can eliminate slipping hazards by sweeping water out of low areas used as passageways inside of buildings under construction.

Don't Slip on Ice and Snow

When we work in colder climates, ice and snow make things slippery. Clean and sand any work surfaces, such as scaffolds and passageways, where there is ice and snow. Or turn the planks over. We need the best possible footing we can get. We don't want to end up like one fellow. He didn't sweep off the scaffold one afternoon after some light snow had fallen during the morning. He slipped and fell ten stories to his death.

Controlling the Weather

As I said, we can control the weather only as far as it affects the job. I haven't been able to discuss all of the safety precautions that can be taken in case of inclement weather. But common sense usually dictates the right thing to do in any situation.

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Comments: _____



Flagging Traffic



Do you feel that the motoring public is out to get you? That if you don't hop out of the way quickly enough, they will run you down? It is probably because many drivers take the attitude that we should see them and keep out of their path—just one of the hazards of flagging traffic.

When flagging traffic, we want to do everything we can to prevent an accident. Because when an accident occurs, everyone suffers: the motorist, our Company, and us. An accident can mean damaged vehicles and equipment, personal injury, and fatalities.

Signs Can't Think

Signs normally do a good job of giving messages or directions. But they have one disadvantage. They can't think. And if a situation changes suddenly, our signs can't automatically adjust. That is where we come in. A flag person is used where conditions are constantly changing and traffic instructions must change, too.

For traffic control to be effective, the job has to be set up properly. We put out the necessary signs in advance to warn motorists they are entering a construction area, and to let them know that a flag person will be giving directions.

Make Sure They See You

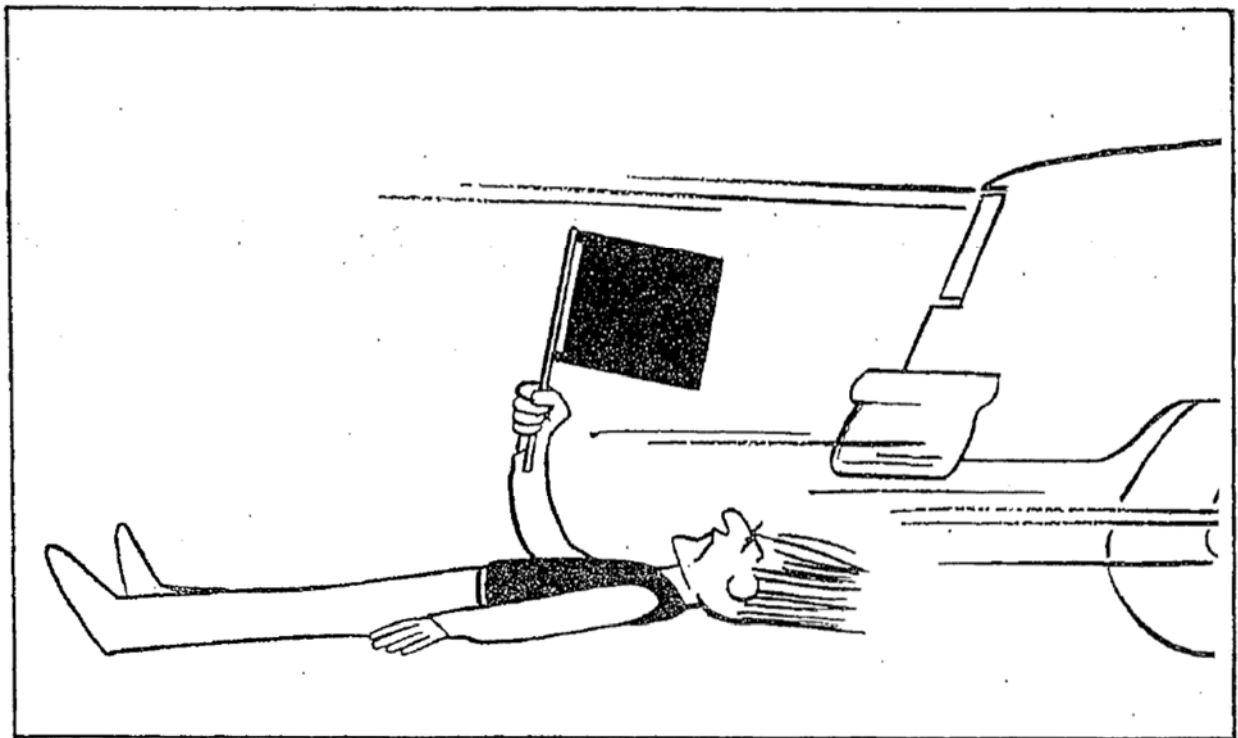
Motorists will be looking for the promised flag person, and should be able to spot you quickly. That is one reason you wear a fluorescent vest. So you will stand out. But let's not defeat its purpose. Don't let a bunch of other employees gather around you, so that you can't be seen at all. Or what do you suppose motorists think when they come upon a whole group of us waving our arms, all of us directing various pieces of construction equipment and no one directing the driver? Sometimes motorists find two persons giving them conflicting directions. We can avoid such situations by following these few basic rules:

1. As a flag person, you should understand what our operation involves, so that you know what to anticipate when directing traffic.
2. You should be properly dressed and neat in appearance. Footwear is important. Remember that pavement can get mighty hot or cold, depending on the weather. Sturdy shoes or boots are advisable.

3. Depending on state requirements, paddles or flags of the correct size must be used. Flags should be at least 24" square.
4. There is only one right way to signal traffic, while there are many wrong ways. We all should be using one standardized set of signals.
5. Only designated flag persons should be directing traffic, except in emergency situations. These individuals must be alert to traffic conditions and the construction operations at all times.
6. Never turn your back on traffic. Many a flag person has been knocked for a loop.
7. Flag persons should be firm but courteous with the public at all times. The general public could well form an opinion of the construction industry as a whole by the impression they receive from you.

Their Highway

Always remember that it's the public's highway, not the Company's. So, we do want to be courteous. But at the same time, we want to make sure that an accident doesn't happen. We may have to be especially firm with some motorists to keep them from hurting themselves or others. Being a flag person is a very important job, because you have the responsibility of protecting the public, your fellow workers, and yourself.



Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

Comments: _____



What You Can Do to Prevent Accidents



Have you ever wondered what you can do to prevent accidents? Maybe, like many people, you believe accidents are bound to happen and there's not much you can do about them. Or, you may think that they only happen to the other person. Well, the truth is that accidents do happen to everyone and often can be prevented.

Something to Think About

Here's something to think about. Statistics show that in many cases an accident could have been prevented by the victim, and, in other cases, by a co-worker. Think of accidents that happened to people you know. Usually it was a stupid mistake. Right? In other words, that person or someone else working on the job could have prevented it.

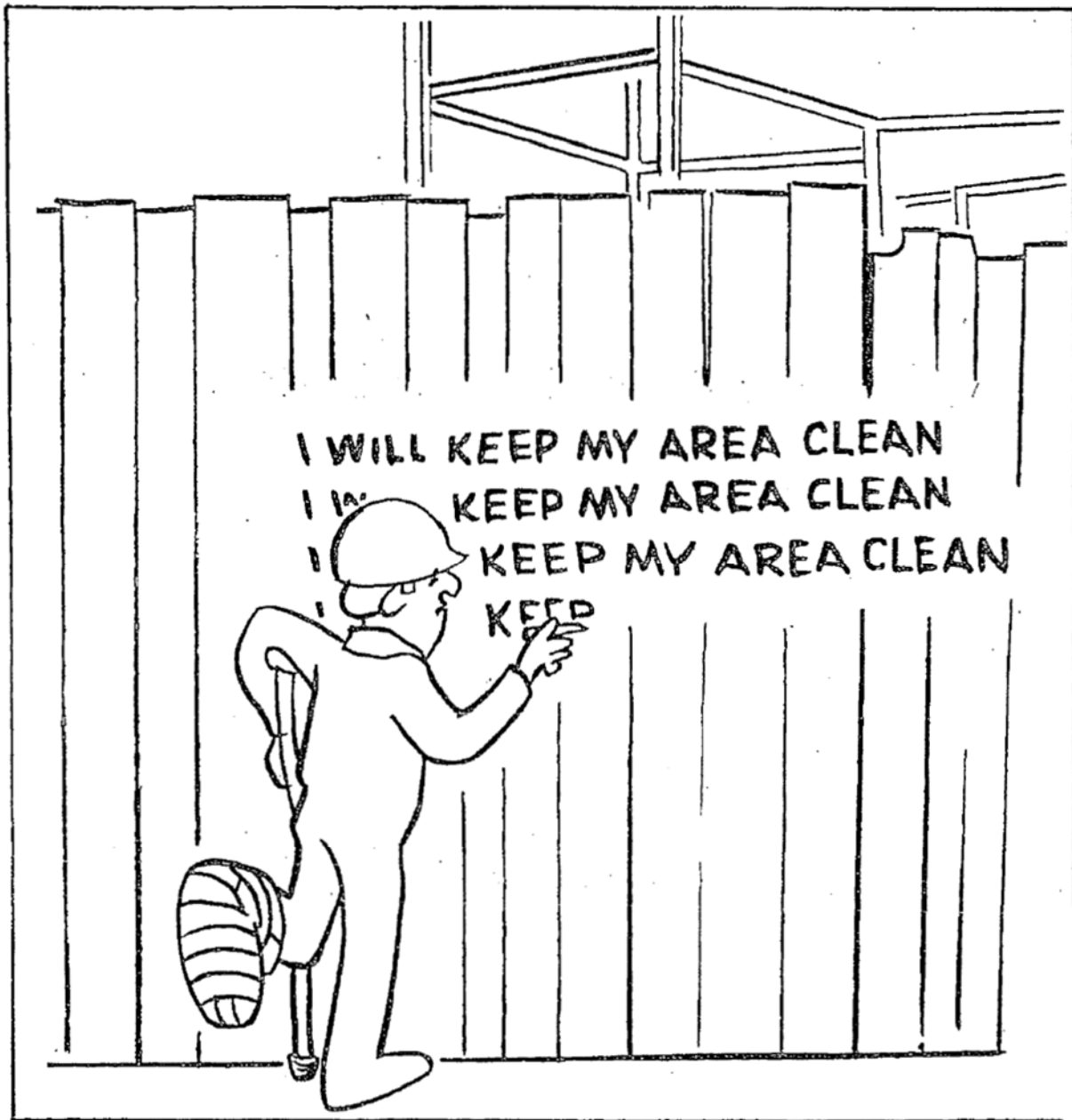
Seven Excellent Suggestions

Here are seven ways you, personally, can do something about preventing accidents:

1. **Make accident prevention a part of your daily routine:** Plan safety in advance. Before beginning a job, be sure your tools are in good condition. Also, see that you have the required protective equipment.
2. **Report unsafe acts or conditions to your supervisor:** If you see something that's dangerous or someone working in an unsafe way, do something about it. If it's an unsafe condition, correct it if you can. Otherwise, report it to someone who has the authority or ability to do so. If you see someone committing an unsafe act, warn that person in a friendly way.
3. **Avoid horseplay:** Aren't you always telling your kids to knock off fooling around before someone gets hurt? Well, horseplay is dangerous for kids of any age. On a construction job you can easily be injured if you're not strictly business all of the time. Often a person is killed or hurt when a "harmless" prank or a practical joke backfires.
4. **Follow instruction:** You'd follow instructions if you were dismantling a time bomb—and very carefully at that. Well, take the same attitude on the job. When we give you instructions, it's only after we've considered the safest and best way to do it. Sometimes doing something just a little differently from what you were told can get you or someone else in a lot of trouble.

6. **Practice good housekeeping:** Nobody likes a slob. It's upsetting to see someone with a messy work area. And it goes even further than that. A sloppy work area is not only hard on the eyes, but a breeding ground for accidents. Trash and materials strewn around can result in trips, falls, and fires.

7. **Dress for the job:** In addition to wearing protective equipment, dress so that you won't get hurt. Don't wear floppy clothing (such as loose sleeves or cuffs) or jewelry that can catch on something or become entangled in machinery.



Date:	Company Name:	
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Comments: _____



Housekeeping



A Good Way to Make Your Job Easier: Have you ever thought of ways to make your job easier? Perhaps you've wondered if someone could come up with better tools and equipment and simplified construction methods. But, there is another way, too—one that not only makes a job easier, but safer—practicing good housekeeping.

Poor Housekeeping Causes Many Accidents: A nail in a scrapped 2 x 4 goes through a shoe and punctures a foot. A pile of trash catches fire. A cluttered walkway causes an employee to trip and fall. Accidents like these are caused by poor housekeeping.

Results Can Range from a Slight Cut to Lost Life: Some poor housekeeping accidents don't amount to much: a small cut, a scuffed elbow or a bruised leg. Others can have disastrous results involving the loss of life and property.

Once-a-Day or Once-a-Week Cleanup Is Not Enough: Housekeeping is a continuing process in which everyone must participate throughout the workday. Let's see how we can eliminate some of the most common housekeeping problems that can cause accidents on this job.

Nails: Stepping on a rusty nail can cause a serious injury. Pull all nails from scrap lumber. Then throw the scrap in trash containers or pile it neatly where it won't be in the way.

Metal Straps and Bands: How many times have you gotten tangled up in this stuff? After removing straps or bands, pick them up immediately and put them in a trash container. It's easy to trip on banding if it is left lying around on the job. This goes for other scrap, too.

Have you ever stepped on a pipe, bolt, dowel, conduit, or small piece of reinforcing steel? You probably twisted your ankle or lost your balance temporarily. Keep round scrap material out of the way. Put it in the trash. Or, if it's going to be used, store it in a safe location.

Extension Cords: These are another tripping hazard. If you must run an extension cord across the walkway, hang it from the ceiling where it won't cause anyone to trip. But, hang it high enough, so you won't hang the person who walks under it.

Food Rubbish: Lunch bags and other food rubbish not only cause trips and falls, but fires also. Put them in trash cans after you have finished eating. Don't leave them around to clutter up the job or to attract animals and insects. It's especially dangerous to leave bottles lying around. They're not only a trip hazard, but can break and cut someone.

Special Containers: Some items should be stored in separate trash containers. These include oily or solvent-soaked rags and empty cans that contain flammable liquids, such as paint, thinner, and glue. Remember to keep these trash containers covered.

Storage Areas: There are numerous storage areas throughout the job. Keep these neat. This not only is safer, but enables you to find what you want more quickly and to get it more easily.

Slipping Hazards: During the course of a job, it is almost impossible not to have grease or tar on the floors of a new building, or on the job site. And, naturally, someone can slip and be hurt. So clean up slipping hazards immediately. This also goes for ice during cold weather.

Safe Housekeeping Pays Off: It's easier to work in a clean area than in a cluttered junk pile. And, as we have been stressing, a clean job means a safer job. Good housekeeping is up to each one of us.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

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Cold-Related Emergencies



Cold-Related Emergencies

It does not have to be extremely cold for someone to suffer a cold-related emergency, especially if the person is wet or if it is windy. Cold-related emergencies can happen in temperatures as high as 50 degrees F.

Hypothermia

Hypothermia occurs when the entire body cools because its ability to keep warm fails. The person will die if not given care. The symptoms of hypothermia are:

- Shivering, numbness, glassy stare
- Apathy, weakness, impaired judgment
- Loss of consciousness

The care for Hypothermia is:

- Gently move the person to a warm place.
- Monitor airway, breathing, and circulation.
- Give rescue breathing or CPR if needed.
- Remove any wet clothing and dry the person.
- Warm the person by wrapping him or her in blankets or by putting dry clothing on the person.
- If the person is alert, give him or her warm liquids to drink that do not contain alcohol or caffeine.

Frostbite

Frostbite is the freezing of body parts exposed to the cold. Severity depends on the air temperature, length of exposure and the wind. Frostbite can cause the loss of fingers, hands, arms, toes, feet and legs. The signals of frostbite are:

- Lack of feeling in an affected area
- Skin that appears waxy, cold to the touch or discolored (flushed, white, yellow or blue)

The care for Frostbite is:

- Get the person out of the cold.
- Do not attempt to rewarm the frostbitten area if there is a chance that it might refreeze or if you are close to a medical facility.
- Handle the area gently. Never rub the affected area.
- Warm gently by soaking the affected area in warm water (100–105 degrees F) until normal color returns and the area feels warm.
- Loosely bandage the area with dry, sterile dressings.
- If the person's fingers or toes are frostbitten, place dry, sterile gauze between them to keep them separated.
- Avoid breaking any blisters.
- Take precautions to prevent hypothermia.
- Call 911 or the local emergency number to seek emergency medical care as soon as possible.

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Project Number/Name:	Meeting Location:	Person Conducting Meeting:

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Heat-Related Emergencies



Heat-Related Emergencies

Heat-related emergencies are progressive conditions caused by overexposure to heat. If recognized in the early stages, heat-related emergencies can usually be reversed. If not recognized early, they may progress to heat stroke, a life-threatening condition.

There are three types of heat-related emergencies:

- **Heat Cramps** are painful muscle spasms that usually occur in the legs and abdomen. Heat cramps are the least severe of the heat-related emergencies.
- **Heat Exhaustion** (early stage) is an early indicator that the body's cooling system is becoming overwhelmed. Signals of heat exhaustion include:
 1. Cool, moist, pale, ashen or flushed skin
 2. Headache, nausea, dizziness
 3. Weakness, exhaustion
 4. Heavy sweating
- **Heat Stroke** (late stage) is when the body's systems are overwhelmed by heat and stop functioning. Heat stroke is a life-threatening condition. Signals of heat stroke include:
 1. Red, hot, dry skin
 2. Changes in the level of consciousness
 3. Vomiting

Care for Heat-Related Emergencies

Take the following steps to care for someone suffering from a heat-related emergency:

- Move the person to a cool place.
- Loosen tight clothing.
- Remove perspiration-soaked clothing.
- Apply cool, wet towels to the skin.
- Fan the person.
- If the person is conscious, give small amounts of cool water to drink.

If the person refuses water, vomits or starts to lose consciousness:

- Send someone to call 911 or the local emergency number.
- Place the person on his or her side.
- Continue to cool the person by using ice or cold packs on their wrists, ankles, groin and neck, and in the armpits.
- Continue to check breathing and signs of life.

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Carbon Monoxide Poisoning



Recommendations for Avoiding Carbon Monoxide Poisoning

It is not widely known that small gasoline-powered engines and tools present a serious health hazard. They produce high concentrations of Carbon Monoxide (CO)—a poisonous gas that can cause illness, permanent neurological damage, and death. Because it is colorless, odorless, and nonirritating, CO can overcome exposed persons without warning. Often there is little time before they experience symptoms that inhibit their ability to seek safety. Prior use of equipment without incident has sometimes given users a false sense of safety; such users have been poisoned on subsequent occasions. Recommendations for preventing CO poisoning are provided below for employers and equipment users.

Recommendations

All employers and equipment users should:

- Not allow the use of or operate gasoline-powered engines or tools inside buildings or partially enclosed areas unless adequate ventilation is established.
- Learn to recognize the symptoms and signs of CO overexposure: headache, nausea, weakness, dizziness, visual disturbances, changes in personality, and loss of consciousness.
- Always place the exhaust of gasoline-powered engines away from air intakes so that the engine exhaust is not drawn into the building.
- Consider the use of tools powered by electricity, or compressed air rather than gasoline if they are available and do not create a greater hazard.
- Use personal CO monitors where potential sources of CO exist.
- Conduct a workplace survey to identify all potential sources of CO exposure.
- Educate employees about the sources and conditions that may result in CO poisoning as well as the symptoms and control of CO exposure.
- Monitor employee CO exposure to determine the extent of the hazard.

What to Do if You or Your Co-Worker Shows Symptoms of CO Exposure

If you or your co-worker begins to show signs or symptoms of CO exposure you should immediately:

- Move the victim to fresh air and administer first aid as necessary

- Call 911 or the local emergency response number
- Stay away from the work area until the equipment has been shut down and the CO levels have been measured and it has been determined that the CO levels are below acceptable guidelines.

Date:	Company Name:	
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Confined Space



Working in Confined Space KILLS!

5 Workers Die inside Underground Pipe—Nine men were performing routine maintenance near Georgetown when equipment ignited a blaze. Four escaped.

A 54-year-old worker died inside a floating cover of a sewage digester while attempting to restart a propane heater that was being used to warm the outside of the sewage digester cover prior to painting it. Workers had wired the safety valve open so that the flow of propane would be constant, even if the flame went out. The heater was located near an opening in the cover of the digester. When the worker attempted to restart the heater, an explosion occurred that vented through the opening. The worker crawled away from the heater into an area that was oxygen deficient and died. A co-worker attempted a rescue and also died.

These are just two of many examples of how dangerous working in Confined Spaces can be. Most injuries and fatalities related to Confined Space work can be avoided by making certain that the individuals involved are properly trained, equipped, and are working with a good plan. Also, it should be noted that in most cases these incidents lack another key ingredient to a successful plan, A RESCUE PLAN. Any time that individuals are required to enter into a Confined Space the plan that they are working needs to include some type of plan for rescuing the workers in the event of a catastrophe. Also, don't rely on the local Fire Department to be the rescue plan. In the event of the first incident above, the local Fire Department that responded was not trained or equipped for Confined Space Rescue and had to stand by and wait for a properly trained and equipped team to arrive.

One of the key components of Confined Space work is having a qualified Competent Person on site to supervise the planning and work. The Competent Person will have the training and authority to transform the confined space into a safe work environment. Additionally, the Attendant assisting the work is required to receive specific training and follow specific guidelines to ensure the safety of the employees performing the work. Finally, the Entrants, the people actually entering the confined space to work, must be properly trained and equipped.

The Competent Person shall be trained in the following:

1. Recognition of the hazards
2. Hazard elimination
3. Implementing a Job Hazard Analysis

4. Atmospheric testing
5. Erecting signs and barricades
6. Ventilation equipment and procedures
7. Selection and use of personal protective equipment
8. Employee retraining
9. Training of Attendants
10. Training of Entrants
11. Training of Field Managers
12. Site-specific duties and responsibilities

The Attendant shall be trained in the following:

1. Recognition of hazards
2. Constant monitoring of the work area
3. Summoning rescue help
4. Identifying changing work conditions
5. Site-specific duties and responsibilities

The Entrants shall be trained in the following:

1. Recognition of hazards
2. Site-specific personal protection equipment
3. Rescue procedures
4. Identifying changing work conditions
5. Site-specific duties and responsibilities

Confined Space versus Permit Required Confined Space

A Confined Space is defined as a space that is large enough for a person to enter, has limited access and egress, and is not designed for continuous human occupancy. As you can tell this would describe many locations in which we normally work.

A Permit Required Confined Space will fit the description of the Confined Space but will also contain one or more of the following:

1. Contains or has the potential to contain a hazardous atmosphere
2. Contains a material that has the potential for engulfing or entrapping an entrant
3. Has an internal configuration that would trap the entrant
4. Contains any other recognized serious safety or health hazard

The Permit Required Confined Space requires all of the training required for Confined Space plus additional training for the recognized hazard. It also requires the use of an Entry Permit that details the entry plan, a plan to deal with the additional hazard, and the rescue plan.

Summary

By now it should be obvious that any time that you are faced with the possibility of Confined Space work, your first priority should be to make sure that everyone involved receives the appropriate

training. Also, you need to make certain that the correct equipment is available and is in good condition. Finally, put together a high quality Rescue Plan that will ensure that the Entrants are safe.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

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Driving Safely



Safe Driving May Be Your Biggest Responsibility

What was the most important thing you did this morning? Maybe you think that it was drinking that first cup of coffee, possibly it was that early meeting, and maybe it was getting your tools. But more than likely it was paying attention while you were driving to work. With the advent of cell phones, driver attention, or more accurately, driver inattention, is becoming more recognized as a cause of traffic accidents.

Each year, 40,000 Americans die and 3 million are injured in traffic accidents. In up to 50% of these crashes, driver inattention played a part.

Are You Paying Attention?

Paying attention while you are driving is vital if you are going to avoid accidents. If you aren't looking down the road in front of you when the driver in front of you slams on his brakes, you may not be able to react in time to prevent an accident. Just a momentary lapse in concentration can cause you to drive off of the road or into the other lane. Maybe you think of yourself as a careful driver; however the fact is that most of us lapse into some sort of attention-robbing activity while we're driving. Here are some of the attention-robbing activities that have been attributed to causing accidents:

- Taking your eyes off of the road while talking to your passenger
- Adjusting the radio
- Putting on makeup
- Reading a document, book or magazine
- Using a cell phone
- Texting
- Trying to pick up something that you dropped
- Eating or drinking

How to Avoid Distractions

It is imperative that you keep your hands on the wheel and your mind focused on the task at hand whenever you are driving. Even a momentary lapse in concentration can be deadly. Perhaps the

most important thing you can do to avoid an accident caused by inattention while driving is to avoid using your cell phone. For many of us, wireless communication devices are a way of life, but using one in a car can cut your life short. The single best way to use a cell phone safely in your car is not to use it while you are moving. There is just too great of a potential for an accident. If you receive a call, pull over before answering. Dialing a number takes your eyes off of the road. That's why it's even more important to stop the car before placing a call.

You should know that anything not directly connected to driving and helping you arrive at your destination safely ranks at number two on the priority list. Any time that you are driving, remember to focus on safety.

Remember, a momentary hesitation may be all it takes to save your life or the lives of those traveling with you.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

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Problem Areas or Concerns: _____

Attendees:

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Comments: _____



Emergency Response



What if Our Best Safety Efforts Don't Prevent an Incident?

Emergency Preparedness: Preplanning, at each site, to ensure site personnel are ready to respond to an abnormal event, such as:

- Job-related Illness/Injury
- Job-related Property Damage
- Medical Emergency (not job-related)
- Natural Disaster (fire, severe weather, earthquake, mudslide, etc.)

Key Points

1. The Seven Ps – **P**roper **P**rior **P**lanning **P**revents **P**itifully **P**oor **P**erformance
 - a. Fail to Plan – Plan to Fail
 - b. Planning and Preparation
2. Site-Specifics
 - a. Based on geographic location
 - i. Northeast, Deep South, Pacific Northwest, California Coast, etc.
 - b. Based on scope of project
 - i. Wood frame, excavation, energized electrical work
3. Preparation Details
 - a. Training – qualified staff
 - i. Based on potential events
 - b. Equipment/supplies/materials
 - i. Based on potential events and numbers of staff on site

- ii. Location of and ready access to emergency equipment, supplies and materials
 - 1) First Aid Kits, AEDs, Portable Fire Extinguishers, etc.
 - c. Communication
 - i. Posted emergency information (including street address and/or cross streets)
 - ii. Contact numbers for management representatives
 - iii. Means to communicate (e.g., 2-way radio, radio telephone, cellular phones)
 - iv. Personnel to lead emergency responders to scene of event
 - d. Accountability
 - i. Assembly point for evacuation (head count performed by Field Manager)
 - ii. Shelter-in-place for external emergency (head count performed by Field Manager)
 - e. Medical Response
 - i. Reporting events (verbal to Field Manager or Safety Captain)
 - ii. Response by trained, qualified personnel (First Aid, CPR, etc.)
 - iii. Access to emergency medical supplies
 - iv. 911 vs. treatment/transport by site personnel (Field Manager determination)
 - 1) If in doubt, Call 9-1-1
 - 2) Ensure someone who knows the location of the victim will direct emergency responders to the scene
 - f. Natural Disaster
 - i. Be alert to warnings and developing conditions
 - 1) NOAA Emergency Alert Radios
 - 2) Watch the sky
 - 3) Pay attention to radio/television broadcasts at beginning of the day
- 4. Making an Emergency Call
 - a. Be calm – speak clearly – be prepared to give
 - i. Your Name
 - ii. Exact Location
 - iii. Call-back number (the phone number from which you are calling)
 - iv. Nature of Emergency
 - v. Where Responders should meet site personnel for quick response to scene
 - vi. DON'T HANG UP ON 9-1-1; LET THEM HANG UP ON YOU!

5. Documentation

- a. Create an Emergency Preparedness Form
 - i. Fill out completely, based on the site-specific assessment
 - ii. Post in conspicuous location for all site personnel to see
 - iii. Field Manager review periodically with field staff
 - iv. Field Staff review periodically on your own

Summary

We work together to create safe and healthful work and working conditions. Should an untoward event occur, our preparation will dictate the ultimate outcome of the event. When we clearly communicate, frequently review, and execute our emergency plans, we can predict as positive an outcome as possible. We all need to do our parts.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Fleet Safety



The Goal of Our Fleet Safety Program Is Zero Motor Vehicle Accidents!

Employees are our most important resource. Safety must be a key part of our lives. This applies to fleet safety as well. The ultimate goal of our Fleet Safety Program is to have zero accidents each year.

Application: A Fleet Safety Program's goal is to provide an accident and injury free environment. When operating a motor vehicle, that vehicle is part of your work environment. A motor vehicle accident is just as likely to occur as an on-the-job accident unless precautions are taken.

Vehicle Policies and Procedures

1. Each driver is responsible to conduct a visual pre-trip inspection of his/her vehicle prior to the first trip of his/her work shift.
 - a. Walk around outside of vehicle to detect any conditions that may affect the safe operation of the vehicle.
 - b. Check inside the vehicle for defects. Adjust rearview mirror, seat adjustment, warning lights, etc.
 - c. While underway, notice any operational defects such as engine performance, brake operation, transmission problems, etc.
 - d. If a defect is found, do not take vehicle out. Use a substitute vehicle until repairs are complete.
2. Fill out your company's Vehicle Inspection Report
3. Have all scheduled maintenance performed when needed. Change oil as recommended by the vehicle manufacturer. Keep all inspection documents on the vehicle.
4. All drivers of vehicles must have a valid driver's license. Report all work related and non-work related traffic infractions to the Safety Manager. An annual review will be conducted by the DSM each July.
5. Cell phone use is prohibited while driving.

Summary

The efficiency of any division can be measured by its ability to control unnecessary losses. A vehicle accident resulting in personal injury, property damage, or equipment loss represents needless waste. It is important

that all supervisors recognize their responsibility to control these losses and that they take all necessary steps to do so. All employees must accept the responsibility of preventing motor vehicle accidents and agree to the safe operation of all division owned vehicles and personal vehicles while on company business.

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Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

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Hand Protection



A Major Problem!

Hand injuries account for a major portion of the injuries that occur to employees every year. Most of those are lacerations which account for approximately 61% of all injuries to contractor's employees. The sad part of this is that practically all of these injuries were preventable.

So, why are we having so many injuries?

The answer to this question is obvious; the employees who are at risk are not using the provided PPE.

Why won't the employees use the PPE that is provided?

There are several answers to this question. Anything from "I can't pick up the small parts" to "It's too hot to wear gloves."

As we assess the reasons why our employees are not wearing the provided PPE, we need to keep in mind that we have available to our employees a variety of hand and arm protection that will fit most applications and eliminate the opportunity of our employees to not wear the PPE.

Arm Protection

Employees who are at risk of coming into contact with sharp edges that could cause lacerations, cuts or abrasions to their arms (such as installing fluorescent light fixtures or stripping wire with a knife or razor blade) are required to wear Kevlar sleeves. These sleeves are available from your warehouse or Safety Manager.

Hand Protection

Employees who handle rough or sharp-edged or abrasive materials or are exposed to conditions that could expose them to potential laceration hazards are required to wear some type of glove. The glove worn must be selected to correspond to the respective hazard.

1. Dyneema Glove—a thin, lightweight knit glove that is cut resistant but is thin enough to allow maximum dexterity.

2. Leather Glove—a good all-around protection for your hand. Leather gloves do not have the cut resistance of Dyneema, but are excellent when handling material that splinters or could cause abrasion.

3. Nitrile Glove—a thin glove that offers no cut resistance and minor abrasion resistance but is designed to protect the hands from most chemical exposure.

If you have any questions about which type of glove you need to protect yourself, you should ask your Safety Manager. They can assist you in selecting the correct glove for whatever task that you are doing.

It is up to all of us to see to it that our employees, co-workers, and even our supervisors are complying in wearing the correct glove when they are at risk.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Lightning Safety



Lightning Never Strikes Twice

Not true! The Empire State Building in New York City is struck 21–25 times each year. Lightning is a real and threatening hazard that needs to be addressed. Lightning's heat exceeds 50,000 degrees F, or three times hotter than the sun. Nine out of ten people struck by lightning survive the event. However, the survivors suffer many long-term physiological and psychological effects.

When you first hear thunder, begin to plan your lightning defense. Can you get to a car or building quickly? Can you get 100 yards away from all metal objects? Lightning often precedes rain, so don't wait for the rain before suspending outdoor activities. Practice the "flash-to-bang" measurement of lightning distance. This is the time from seeing the stroke to hearing the thunder. For each 5-second count, lightning is 1 mile away. At a count of 15 seconds (3 miles), take immediate defensive actions.

If outdoors, avoid water. Avoid metal objects, such as metal conduit, ground rods, electric wires, fences, golf clubs, cranes, structural steel, machinery, power tools, etc. Unsafe places include golf carts, small open-sided shelters, tents or underneath isolated trees. Avoid high locations and open spaces. Where possible find shelter in a building or in a fully enclosed metal vehicle with the windows completely shut. If lightning is striking nearby, you should avoid direct contact with other people, remove all metal objects (watches, rings, jewelry, glasses) and crouch down, with both feet together and your hands on your knees.

If indoors, avoid water. Stay away from open doors and windows. Hang up the telephone and remove headsets. Lightning may strike electric, cable TV, and phone lines and induce voltage into these systems that may result in serious shock hazards.

If a person is injured from lightning, give first aid and if needed CPR. An injured person does not carry an electrical charge and can be handled safely. Call 911 or the local emergency response number or send for help immediately.

Date:	Company Name:	
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Morale Productivity



mo·rale. n. The state of the spirits of a person or group as exhibited by confidence, cheerfulness, discipline, and willingness to perform assigned tasks.

pro·duc·tiv·i·ty. n. The quality, state, or fact of being able to generate, create, enhance, or bring forth goods and services.

safe·ty. n. The condition of being safe; freedom from danger, risk, or injury.

How do they relate?

Good morale is a very important part of a safe and productive jobsite. When the morale is good, people are more relaxed and feel that their input and efforts are respected.

We have all been on a jobsite where the morale was not good. People hated going to work, they didn't want to be there when they were at work and all they could think about all day was getting away from work. These jobsites were always less productive because most felt that the job was not worth any extra effort and anything that they said or did was more likely to get them into trouble. These jobs also create more work related accidents since people are not focused on what they are doing, are easily distracted and in some instances people feel that if they are injured they will be allowed to "get away from the job for a while." Poor morale on the jobsite is like a cancer; left alone it will spread until it kills the job.

On the other hand, when morale is good on the jobsite, people work together, look out for each other and are willing to put out the extra effort to see that not only the job but also their fellow employees succeed. People enjoy going to work to see what new challenges wait, knowing that they will earn respect and appreciation for doing a good job. While on the job they pay attention to their work and co-workers, willing to do whatever is needed to make sure that everyone completes their tasks and is able to go home each day safely. Each employee is willing to lend their advice or help to teach other employees the safe and correct way to get the job done.

So, the question is, how do we ensure that we achieve the desired "good morale" on our job site? Here are several points that may help:

- **Respect:** Respect is earned, not automatically given! Also, remember that respect is a two-way street, if you want respect you must first give respect. Start by treating others the way that you

would like to be treated. Put forth your best effort in everything that you do, and respond to others when they do the same.

- **Communicate:** Good, quality communication is key to successful implementation. When you communicate with others, take the time to make sure that they understood what you were saying. Have them repeat the instructions back to you, listen when they speak and pay attention to them. Good communication skills start with the ability to be an active listener. When others are speaking to you, focus on them and what they are saying; repeat what is important to make sure that you really do understand.
- **Praise:** We have all heard the saying “Praise in public, criticize in private,” but how often is that the way that it is actually done? Some people feel that praising other employees is only the responsibility of management, but that is not the case. All of us should take an active role in recognizing superior performance. When you see someone doing something that deserves praise, don’t wait for the Foreman to say something. Start the ball rolling yourself. Praise is something that we all crave, so “Praise in Public” and do it OFTEN. When someone does not meet expectations or fails to perform as desired, critiques are often required. When critiquing another person, do it away from others and try to make it a positive instead of a negative.
- **Strive to do the job right:** Although doing the job right should start with the Project Manager and Foreman doing a good pre-planning, it doesn’t stop there. A good pre-plan for the job is only successful if everyone accepts and applies the plan. From the apprentice up, we should always have a plan for what task we are assigned. Make sure that you understand the expectations and develop your own plan to meet those expectations. Make sure that you have all of the materials and tools necessary to complete the task and if you have any questions, ASK! While we are talking about tools, **YOU DON’T NEED TO CARRY EVERY TOOL THAT YOU OWN!** You should wear your tool belt whenever it makes sense to wear it. When you do wear your tool belt, only carry the tools that you need for the task that you are doing. If you are trimming, all you really need are your strippers, diagonal cutters, a level and screwdrivers.

There are many other ways to achieve good morale, but if we start by applying these few goals, the rest will fall into place. We can succeed, but only if we work together for success.

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Trenching and Excavation



Ten workers will die this month due to trench and excavation incidents. It's enough to make you sick, but is it enough to make you safe?

Our trenching and excavation work must be effectively managed. Managers and others each have a role in making our underground work safe. Let's each do our part!

Application: A company's Trenching and Excavation Policy applies to all underground work at a 4 foot depth or deeper.

- Qualified workers are needed to do quality work.
- Trained workers are needed to create and work in the underground environment.

Key Points

1. Excavation and trenching work requires many controls.
 - a. The Safety Manager must be notified before creating a trench or excavation at 4 feet or deeper.
 - b. A Competent Person is required to assess conditions and oversee creation of underground work.
 - c. The soil on the site must be classified as part of the underground safety controls.
 - i. Protective systems must be created only for Type B or Type C soil.
 - ii. Many companies don't recognize Type A Soil Classification.
 - iii. Suspect soil excavations and trenches must be assessed for air quality.
 - d. A protective system, such as trench boxes or shoring, must be an engineered system.
 - e. A "First Call" must be made at least 48 hours before creating the trench or excavation for an estimated location of the underground utilities.
 - i. Any unearthed utilities must be effectively supported throughout the underground work process.
 - ii. Only hand tools can be used within 2 feet of an estimated location of an underground utility in order to precisely locate that utility.

- f. No worker on the jobsite may enter an excavation or trench before a Competent Person has performed the required daily inspection.
 - i. Inspections must also be inspected as conditions change.
- g. The spoil (dirt removed to create the trench or excavation) must be placed at least 2 feet from the edges of the excavation or trench.
- h. Barricades must be provided to protect people from the hazards of the excavation.
- i. Any trenches or excavations with accumulated or accumulating water may not be entered until the water hazard is eliminated.
- j. A safe means of entering and exiting the excavation or trench must be provided.
 - i. Restricting travel to 25 feet or less to that means of entering and exiting.
 - ii. If a ladder is used, it must meet all the requirements of the Ladder Policy and OSHA's Ladder Standard.
- k. Any excavation or trench deeper than 20 feet deep must be with the approval of the Division Safety Manager, and a Registered Professional Engineer must design the protective system.
- l. Methods of protecting underground workers must include sloping, benching or an engineered system of soil retention.
- m. While creating an opening in the earth, and an equipment operator does not have a clear view of the excavation, an assisting person must provide effective signals to the equipment operator.
- n. As work is completed in an excavation or trench, backfilling must take place to reduce the size of the excavation or trench.
- o. An emergency response plan must be in place for any jobsite involving excavation and trenching.
 - i. The company should have a site emergency response plan and it must be activated.

Summary

Safety on the jobsite cannot happen without proper controls. Each of us can and must play a part in safe excavation and trenching. It's part of the job!

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Working Safely



Pro-Active Safety

Keeping your body and all its parts attached and functioning properly takes work. In order to stay safe all the time, you must practice what is called Pro-active safety. Pro-active safety means that you take responsibility to act safely before anyone tells you to or whenever the situation demands safe behavior. Practicing pro-active safety means practicing prevention and protection.

Application: The best way to prevent something from happening is always to be on the lookout for hazards and act before they become accidents. It takes both employer and employee to make pro-active safety work. When used together prevention and protection give the best defense against accidents. In fact, there are many safety-minded people who believe pro-active safety causes a “Zero Accidents” mentality. When enough employees and employers get the “Zero Accidents” mentality, it is possible to stop having accidents.

Prevention

- An incident is any deviation from the acceptable standard.
- A hazard is an incident without adequate controls applied.
- A hazard has the potential to cause damage.
- When the hazard causes damage it is called an accident.

Responsibility

- Creating the incident is something you have control over.
- All accidents result from incidents, but not all incidents result in accidents.
- We can correct an incident and not allow an accident to happen.
- No incidents, no accidents.
- As the law of Opportunity says, “Any person faced with the circumstances of an incident or a hazard, who has the opportunity to intervene, is responsible when a hazard causes an accident.”

Protection

- Follow all safety rules, all the time.
- Wear the proper PPE when needed.

- Pay attention to hazardous situations, and do something about them.
- Use the equipment and procedures that will protect you from injury if an accident does happen.
- Be prepared when working in any weather climate.

Summary

Pro-active safety is the skill that allows us to keep functioning in one piece. Two aspects of a pro-active safety attitude are prevention and protection. You can take responsibility to prevent accidents by protecting yourself and others from hazards caused by an incident.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Workplace Violence



An Unfortunate Fact Of Life

Every year, many people die on the job. The leading cause of death is traditionally highway accidents, but workplace homicide is among the top three causes. You might not expect to be a murder victim while at work, but it does happen more often than you might think.

Application: Homicide is just one extreme example of something we call workplace violence. Technically, workplace violence is any violent act that occurs in the workplace and creates a hostile work environment that affects your physical or psychological well-being. That's the technical definition. Here are some examples you may be familiar with:

- Harassment
- Intimidation
- Threats
- Theft
- Stalking
- Assaults
- Arson
- Sabotage
- Bomb Threats
- Kidnapping
- Extortion
- Suicide

Why You Should Care

Every workplace, regardless of its size or type of business, runs the risk of falling victim to workplace violence. Sometimes it is just a random act of violence, but often there are warning signs.

- Making direct or indirect threats of violence to someone on the job
- Expressing bizarre, irrational thoughts and behaviors
- Having a fascination with weapons and a history of violence
- Being disagreeable and uncooperative at work

- Being a loner and having a disdain for authority
- Seeing his or her job as everything in life
- Being a long-term employee
- Blaming others for his or her problems
- Feeling entitled, that the company “owes” him or her something

Summary

All of us can find ourselves faced with someone who appears out of control. What you do in that situation can mean the difference between diffusing the situation and suffering an injury. Keep these ideas in mind.

What you should **NOT** do:

1. Speak rapidly, raise your volume or use an accusatory tone.
2. Make physical contact, challenge, threaten or dare the individual.
3. Make false statements or promises you can't keep, invade the person's personal space or pose in a challenging stance, such as directly opposite someone, with your hands on your hips.

Things you **SHOULD** do:

1. Project calmness by moving and speaking slowly, listen attentively and encourage the person to talk.
2. Ask for small, specific favors such as asking the person to move to a quieter area.
3. Employ delay tactics to give the person time to calm down
4. Keep at least 3 feet between you and the other person.
5. Help the person break problems down into smaller, more manageable problems.

If at all possible, remove yourself from the area and notify a supervisor if someone seems to be becoming angry. Do not let these situations escalate. Remember, workplace violence is more common than you think.

Date:	Company Name:	
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Comments: _____

Electrical Safety



Energized Electrical Safe Work Practices



Electricity Can Kill

As we all should know, electricity can and does kill. Electrical incidents result in numerous fatalities and serious injuries every year. All of these incidents can be prevented by proper training and application of Personal Protective Equipment.

The best choice when faced with the possibility of working on energized circuits, systems or components is simply to turn the power off, apply lockout and tagout, then test to verify that the electricity is in fact turned off and the circuit, system or component is safe to work on. Proper application of lockout/tagout/try-out is the absolute way to protect yourself and those around you.

Definition of Hot Work

Energized Electrical Work is defined as: “Any work on electrical equipment, circuits, devices, systems, or any other energized part(s) where an employee is required to deliberately, or could accidentally, place any part of his/her body, tool or material into or around such electrical devices where the voltage has been deemed to be 50 volts or more.”

When You Have to Work it Hot

When you have explored all other avenues and have to work on something while it is energized, there is a specific process to follow which will help you to perform the work as safely as possible.

- Develop a detailed plan and go over the plan with all involved
- Work the plan—DO NOT IMPROVISE!
- Perform a hazard risk analysis to determine the level of exposure
- Use the hazard risk analysis to select the appropriate PPE
- Always use properly rated insulated tools
- Use insulated mats and blankets to reduce your exposure
- Inspect the PPE, insulated tools and insulated mats to ensure that it is in good condition and will perform its required functions
- Use the hazard risk analysis to determine the Flash Hazard Boundary

- Ensure that no unauthorized personnel are permitted to pass the Flash Hazard Boundary
- Ensure that all authorized employees inside the Flash Hazard Boundary are wearing the same PPE as the person actually performing the work

Remember that when referring to PPE it also includes the appropriate level of Fire Retardant clothing. Cotton shirts and denim jeans are not adequate except in some circumstances with low voltage and fault currents. In most cases some type of FR rated clothing will be required based upon the hazard risk analysis.

The Key to Surviving Energized Electrical Work

1. Always consider every electrical conductor or circuit part to be energized until proven otherwise.
2. Plan the work – Work the plan
3. Perform and document a good quality Hazard Risk Analysis
4. Ensure that you have the correct PPE, including insulated tools
5. Make certain to inspect all PPE prior to using it
6. Defective PPE should not be used; it should be tagged “Do Not Use” and turned in to your supervisor for replacement.

Summary

Energized Work is not a method used to satisfy your customer, it is an unnecessary risk that we as electricians should do our best to avoid. We don't need to risk our lives or the lives of others for someone else's convenience. When we are required to work energized we need to make certain that we do everything in our power to see to it that we will survive the task. Electricity can and will kill.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

Comments: _____



Electrical Hazards



Electrical Hazards

Many of the strict safety rules we enforce here are designed to protect you from the dangers associated with electricity. Rules such as lock out/tag out are there so we don't suffer an injury from the unexpected release of energy. Anything that depends on electricity to operate is a potential hazard. It doesn't have to be a large, fancy industrial machine to be dangerous. A small break room appliance can cause an electrical injury.

Electrocutions occur with surprising frequency to American workers. The National Institute for Occupational Safety and Health (NIOSH) estimates that at least 700 occupational electrocutions occur each year.

Energized Equipment

Energized equipment poses the most obvious electrical threat in the workplace. To help avoid a serious injury, follow these basic rules when working with or around electrical equipment, systems or circuits:

- Treat all electrical equipment, systems or circuits as energized until lockout/tagout/try-out/test procedures are implemented.
- Always lockout/tagout/try-out and test any equipment, system, or circuit before working on it.
- Wear the correct Personal Protective Equipment (PPE)
- Use insulated tools when working in areas where electrical hazards exist.
- Be careful when using ladders and/or working near overhead power lines.

Cords and Other Hazards

Anything that is plugged in, or connected to power, poses a threat of shock or electrocution. Never assume that the voltage is too low to be harmful. When setting up or working around electrical cords in the workplace, follow these guidelines:

- Protect all flexible cords and cables from physical damage.
- Don't let cords get too tight. Keep some slack in the cord to prevent too much tension.
- Never use cut, broken, cracked, frayed or damaged cords.

- Only use extension cords for temporary situations.
- Keep all cords running over dry surfaces. If you find a cord coming into contact with moisture, notify a supervisor.
- Check to make sure that all electrical cords and devices are properly grounded.

The Importance of First Aid/CPR

If you treat any electrical equipment, system or circuit with extreme caution, chances are slim that you will suffer an electrical injury. If you see someone sustain an electrical shock, it's vital that the person receives medical attention immediately.

NIOSH investigations into fatal electrical injuries revealed that once an electrical injury occurs, emergency response plans are often lacking, even in organizations that promote safety. Anyone in your company who works around energized equipment, systems or circuits should know how to de-energize the equipment, systems or circuits before rescuing a worker who is in contact with an electrical energy source. Remember that even low voltages can be fatal. Make sure that you know how, or can find someone, to perform CPR quickly in the event of an electrical emergency, and be sure to understand our procedures for administering first aid in these situations.

(Discuss your procedures for first-aid response on your job site and how to make first aid available in the event of an electric shock.)

Conclusion

We don't want anyone to suffer an electric shock. A few preventative techniques and knowing how to respond in an emergency will help keep everyone safe.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

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Problem Areas or Concerns: _____

Attendees:

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Comments: _____



Temporary Power



Permanent Danger?

Electricity is accepted as a source of power without much thought about the hazard encountered. In a properly designed and maintained system, electrical current is safely channeled in controlled paths. There are ways to ensure the safety of all personnel working around temporary power.

Application: As the electrical contractor on a construction site, it is your responsibility to provide the temporary lighting and electrical panels for other contractors. Here are some basic elements of installation to remember.

Temporary Lighting

- Needs to be hung at least 8 feet above the floor.
- When wire is spliced together, caps and electrical tape are required.
- If wire is used to hang the temporary lighting, it needs to be insulated and must be hung on solid wire—not where there is a splice.
- The cages need to be closed and a bulb must be in every socket.
- The bulb does not need to be working, but must be in place to cover the open socket.

GFCI

- On panels where we provide outlets, there must be a GFCI for every outlet.
- The GFCIs must be tested weekly.
- GFCIs should react when there is differential of 5 milliamps or 5/1000 amps between the hot and neutral wire.
- When temporary outlets are replaced with permanent building outlets, you must make sure that the GFCI protection is continued.

Extension Cords

- All extension cords should have a ground pin
- Inspect extension cords for cuts, exposed wire or frayed wire.
- All power tools should be double insulated.
- Keep extension cords off damp surfaces.

Energizing Electrical Rooms

- Before the rooms can become energized, there must be a door on the room and a lock on the door.
- Inside the room, panel covers must be on hot panels.
- Once the room is energized, the electrical contractor becomes responsible for it.
- A sign on the door must state that only authorized persons are allowed to enter.

Summary

Anyone who has worked on a construction site knows that other contractors will disturb the lighting and other electrical items, so as long as the job is in progress, maintaining the temporary power must be a daily task. It must be maintained in a safe manner to ensure the safety of personnel working with and around it.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

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Comments: _____



Temporary Power for Non-Electrical



Permanent Danger?

Electricity is accepted as a source of power without much thought about the hazard encountered. In a properly designed and maintained system, electrical current is safely channeled in controlled paths. There are ways to ensure the safety of all personnel working around temporary power.

Application: The electrical contractor on a construction site is usually responsible to provide the temporary lighting and electrical panels for other contractors. Here are some basic elements of installation to remember.

Temporary Lighting

- Needs to be hung at least 8 feet above the floor.
- When wire is spliced together, caps and electrical tape are required.
- If wire is used to hang the temporary lighting, it needs to be insulated and must be hung on solid wire—not where there is a splice.
- The cages need to be closed and a bulb must be in every socket.
- The bulb does not need to be working, but must be in place to cover the open socket.

Temporary Distribution Boxes (Turtles)

- Turtles should always be set upright on the stands. This orientation will protect the receptacles from any moisture.
- Turtles should be moved or disconnected by qualified individuals only.
- GFCI's should be tested weekly and the complete turtle should be inspected each month.
- Temporary light stringers should never be plugged into the receptacles on a turtle.

GFCI

- On panels where we provide outlets, there must be a GFCI for every outlet.
- The GFCIs must be tested weekly.
- GFCIs should react when there is differential of 5 milliamps or 5/1000 amps between the hot and neutral wire.

- When temporary outlets are replaced with permanent building outlets, you must make sure that the GFCI protection is continued.

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- Once the room is energized, the electrical contractor becomes responsible for it.
- A sign on the door must state that only authorized persons are allowed to enter.

Summary

Anyone who has worked on a construction site knows that other contractors will disturb the lighting and other electrical items, so as long as the job is in progress, maintaining the temporary power must be a daily task. It must be maintained in a safe manner to ensure the safety of personnel working with and around it.

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Items Discussed: _____

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Attendees:

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Lockout/Tagout



Don't Touch That Lock

On a good day, all of our machines are working properly. Unfortunately, not every day is a good day. Machines have a tendency to break down and to require routine maintenance. Many times, we work on a machine simply to extend its life. This type of work presents some special hazards. For example, machines can start up unexpectedly during maintenance and cause serious accidents.

All Employees who may be exposed to energized or potentially energized equipment either on purpose or accidentally, must be properly protected from the energized circuit, equipment and parts or unexpected start-up of that equipment. Energy sources include electrical, mechanical, hydraulic, pneumatic, and other power sources.

Policy (Your Company may choose to adopt the following policy)

1. **No work** shall be performed on or near energized circuits, or where workers can come in contact either deliberately or accidentally with an energized source. If the energized circuit, equipment or part cannot be properly de-energized and locked out, then the work must be performed in full compliance with NFPA 70E or your company's Energized Electrical/Hot Work Procedure.
2. Applying tape, tags **without** lockout devices and locks or simply tagging the switch, valve, etc. is prohibited.
3. All employees will at all times have a voltage tester to detect voltage and **will use it to verify no electrical current is present before beginning any work**. Work on energized circuits, equipment or parts is strictly prohibited unless in full accordance with the Energized Electrical / Hot Work Procedure.
4. No employee is permitted to remove another employee's lockout.
5. It is the responsibility of the supervisor to ensure that no work is performed on electrical related systems beyond the protection of the installed lockout device, lock and tag.
6. Multi-lock devices must be used if other employees or crafts are involved in the lockout.

7. Every person working on an electrical circuit, equipment or part that has been de-energized, locked and tagged shall have a lock and tag in place on the lockout device.
8. Proper lockout devices, locks and tags will be available when needed or required.
9. In every case the controlling switch, breaker or disconnect means shall be rendered inoperable, locked, properly tagged and **tested with an operable voltage tester to verify that no electrical current is present** before any work is performed.
10. If the lockout of a system must be in place for a long period of time, inspections must be performed after each break, lunch or start of the shift to ensure lockout devices and tags are still in place.
11. Failure to fully comply with this Lockout/Tagout policy may result in immediate dismissal.

Control of Electrical Rooms

1. All electrical rooms are to **be locked** with only qualified individuals having access, marked with “Danger Electrical Voltage” signage or equivalent, which will not be removed until the room’s final inspection and the following conditions are met.
 - All electrical work is completed in the room.
 - All electrical work is complete which originates or is controlled in the room.
2. The signage will include a list of all employees authorized to work in the electrical rooms along with the names and cell phone numbers of the following employees:
 - Field Manager: _____
 - Foreman: _____
 - On-site Safety Coordinator: _____
 - Project Manager: _____
 - Safety Manager: _____

If another trade or an unauthorized employee has to access the electrical room they will be escorted at all times by an authorized employee.

Lockout/Tagout Procedure

The following steps should be taken to implement the lockout/tagout procedure:

1. Notify the Owner/General Contractor, other trades and all employees on the project that may be affected.
 - Affected Employee: An employee whose job requires him/her to operate or use equipment under lockout/tagout, or whose job requires him/her to work in an area where lockout/tagout is being performed.
2. Identify and verify all energy sources applicable.

3. Turn “off” the equipment (remove and/or disconnect the energy source).
4. Test the “on” switch/control, on the equipment, to confirm the energy source has been removed. Turn the switch back to “off”.
5. Lockout/block-out the energy sources; using lockout devices, locks and appropriately completed tags.
6. Test lockout devices to be sure that it cannot be re-energized.
7. **Using a volt meter test all circuits, equipment connections and parts where work has to be performed to verify the electrical energy has been shut off.** (The volt meter should be tested on a now-energized circuit to verify it is working properly)
8. Begin and complete work.

Summary

Please remember that all of our safety procedures and rules are here to protect us. But because of the potential for severe injuries, it is absolutely critical that you follow lockout/tagout procedures to the letter. Good safety practices and government regulations require us to take steps to protect ourselves when repairing or maintaining machines. Machines that start up unexpectedly or accidentally during this process can cause severe injuries. That’s why we use a lockout/tagout procedure.

Warning—due to the serious consequences of not following this procedure:

1. **Any person who operates an energy source isolation device to which lockout devices and tags are attached, or removes a lockout device or tag without authorization will be subject to immediate discharge.**
2. **Any person who works on an energy source without following this procedure will be subject to immediate discharge.**
3. **Only the authorized person who installed the device is allowed remove the lockout device.**

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Fall Protection



Fall Protection



The Less-Protected We Are, the Harder We Fall!

Working at heights, while necessary, brings with it inherent safety risk. Your efforts, and mine, can ensure safe and successful elevated work every day.

Application: These Fall Protection requirements apply to all work, with the exception of working from ladders at heights less than 20 feet.

- Our goal is protecting all workers from falls when working at heights of 6 feet or more above the next lower walking/working surface.
- NOTE: some project developers and host companies may place more stringent requirements for fall protection on their projects. We should conform to these requirements.
- NOTE: if working above a hazardous job process (e.g., moving equipment, chemical hazards), fall protection is required at any height.

Key Points

1. Requirements include a positive means of fall protection when elevated at 6 feet or more above the next lower walking/working surface. A “positive means” of fall protection includes:
 - a. Standard Guardrailing
 - b. Personal Fall Arrest System (PFAS)
 - c. Safety Netting
2. General requirements for guardrail systems include
 - a. Resistance to at least 200 pounds of force in any direction
 - b. Snag-free components
 - c. Assembled and maintained under the supervision of a Competent Person
3. Standard Guardrailing
 - a. Top Rail – 42" +/- 3" above the walking/working surface
 - b. Mid Rail – 21" above the walking/working surface, or 1/2 the distance from the top of the top rail to the walking/working surface.
 - c. Toe Board – 4 inch nominal height (assuming use of 2" x 4" construction).

4. Personal Fall Arrest System (PFAS)
 - a. Full Body Harness, properly adjusted and fitted
 - i. Body belts may not be used for fall arrest; they are permitted for positioning only.
 - b. Shock-absorbing Lanyard with double-action snap hooks.
 - i. Properly connected to an anchorage point on one end and to a Dee-Ring on the harness
 - c. Anchorage (Anchorage Point)
 - i. A fixed structural point that provides a minimum 5,000 pound shock-load resistance.
 - 1) Anchorage Points are limited to connecting 1 person, unless engineered to accept more than one worker's connection.
5. Safety Netting
 - a. Engineered system of nets serving as a fall arrest system.
 - b. Exhaustive, complicated requirements to erect and maintain netting systems.
 - i. Engineering
 - ii. Dimensions
 - iii. Testing, Housekeeping/Maintenance
6. Training
 - a. All workers assigned to elevated work must be trained by a Competent Person.
 - b. Training must include
 - i. Selection and Inspection of fall protection systems.
 - ii. Proper creation of fall protection systems.
 - iii. Effective fitting of personal fall arrest systems.
 - iv. Taking defective fall protection systems out of service.
 - 1) And reporting concerns to the Competent Person.
 - v. Rescue – providing a site-specific rescue procedure in case a fall arrest event takes place.

Summary

Logically, we would prefer to not perform elevated work. Since this is not feasible in this industry, it is the responsibility of all managers and staff to conduct proper hazard assessments. From these assessments, we need to create, manage, maintain and use effective fall protection systems – to ensure all workers go home safely each day. Yes, it is YOUR responsibility!

Date:	Company Name:	
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Items Discussed: _____

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Ladders



What We Don't Know CAN Hurt Us!

Ladders are a commonly used tool. While valuable, ladders come with inherent risk. As with all tools, ladders must be carefully selected, inspected, used and maintained!

Application: Ladders are often the tool of choice for elevated work, especially mobile, short-term tasks. To ensure safe work with portable ladders, there are certain things we need to know:

Portable Ladder Types

- Straight ladders – single piece ladders, to be leaned against a structure for support.
- Extension ladders – similar to straight ladders in use, extension ladders are multi-section tools that extend in length, according to the ladder user's needs. Use as you would a straight ladder.
- Self-supporting ladders – also called “stepladders,” self-supporting ladders are intended only for mobile work where a quick up-and-down action is needed.
- Never used as a straight or extension ladder - need to be fully unfolded.
- Always self-supporting on a firm, stable surface.

Don't Use Portable Ladders if You Can't SIUM!

1. **Select**—Choose the proper ladder. Straight & extension ladders lean against a support; stepladders support themselves.
2. **Inspect**—Be sure your ladder is fit for use.
 - a. Thoroughly check for damage or excessive wear to the ladder. If in doubt, don't use it!
 - b. Contact your Field Manager or Competent Person to verify the ladder's fitness for use.
 - c. NEVER use a damaged or defective portable ladder! Tag it “*out of service.*”
 - i. No unauthorized repairs or modifications.
 - d. All manufacturer labels and decals are present and readable.
 - i. Stepladders
 - 1) Cap is not damaged or modified
 - 2) Rails are intact – no cracks or splinters; no twisting or other deformity

- 3) Treads are undamaged – no warping, depressions or cracks/cuts and are free of debris (mud, cement, etc.)
 - 4) Spreaders are not excessively loose – rivets are snug and secure
 - 5) Feet are in good repair – anti-slip treads are present and not damaged
 - 6) Exposed surfaces are not painted or covered with unapproved labels or decals.
 - ii. Straight ladders
 - 1) Rails are intact – no cracks or splinters; no twisting or other deformity
 - 2) Footings are undamaged
 - 3) Exposed surfaces are not painted or covered with unapproved labels or decals.
 - 4) Treads are free of debris (mud, cement, etc.).
 - iii. Extension ladders
 - 1) Same requirements as straight ladders.
 - 2) Pulleys are fully functional and free of defects.
 - 3) Ropes are properly routed through pulleys; not worn or frayed.
 - 4) Ladder sections may never be separated to be used as straight ladders.
3. **Use**—Be sure to use ladders the way the manufacturer intended.
 - a. Ladders are for feet, not for other body parts.
 - b. Sitting on top of a ladder is no safer than standing on top of a ladder.
 - i. Stepladders only in a self-supporting position, with spreaders fully engaged.
 - 1) Erected at least 10 feet from guardrail systems.
 - 2) Or, use a positive means of fall protection (Personal Fall Arrest System).
 - ii. Straight ladders & extension ladders properly supported by adjacent structure.
 - 1) Erected w/base 1 foot from support structure for every 4 feet of working height.
 - 2) Erected at least 10 feet from guardrail systems, to ensure proper fall protection.
 - 3) Or, use a positive means of fall protection (Personal Fall Arrest System).
4. **Maintenance**—Ladders must be maintained in fit, safe condition.
 - a. Stored to prevent damage; loaded & unloaded carefully when transporting.
 - b. Kept in clean condition, ensuring all required labels and decals are present and readable.

Summary

Portable ladders are excellent tools, but require proper selection, inspection, use and maintenance. Only trained, qualified workers should be permitted to work with ladders, under the guidance of a Competent Person. Never take chances with ladders—it's up to you!

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

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Ladder Tips



Do you know there's a killer on this job that you probably meet face-to-face every day? I'm talking about the common, ordinary ladder. Ladders are involved in many accidents, some of which are fatal. Your life literally can depend on knowing how to inspect, use, and care for this tool. Let's spend a few minutes talking about ladders.

Inspecting Ladders

Before using any ladder, inspect it. Look for the following faults:

1. Loose or missing rungs or cleats.
2. Loose nails, bolts, or screws.
3. Cracked, broken, split, dented, or badly worn rungs, cleats, or side rails.
4. Wood splinters.
5. Corrosion of metal ladders or metal parts.

If you find a ladder in poor condition, don't use it. Report it. It should be tagged and properly repaired or immediately destroyed.

Using Ladders

Choose the right type and size ladder. Except where stairways, ramps, or runways are provided, use a ladder to go from one level to another. Keep these tips in mind:

1. Be sure straight ladders are long enough so that the side rails extend above the top support point by 36" at least.
2. Don't set up ladders in areas such as doorways or walkways where they may be run into by others, unless they are protected by barriers. Keep the area around the tip and base of the ladder clear. Don't run hoses, extension cords, or ropes on a ladder and create an obstruction.
3. Don't try to increase the height of a ladder by standing it on boxes, barrels, or other materials. Don't try to splice two ladders together either!
4. Set the ladder on solid footing against a solid support. Don't try to use a stepladder as a straight ladder.

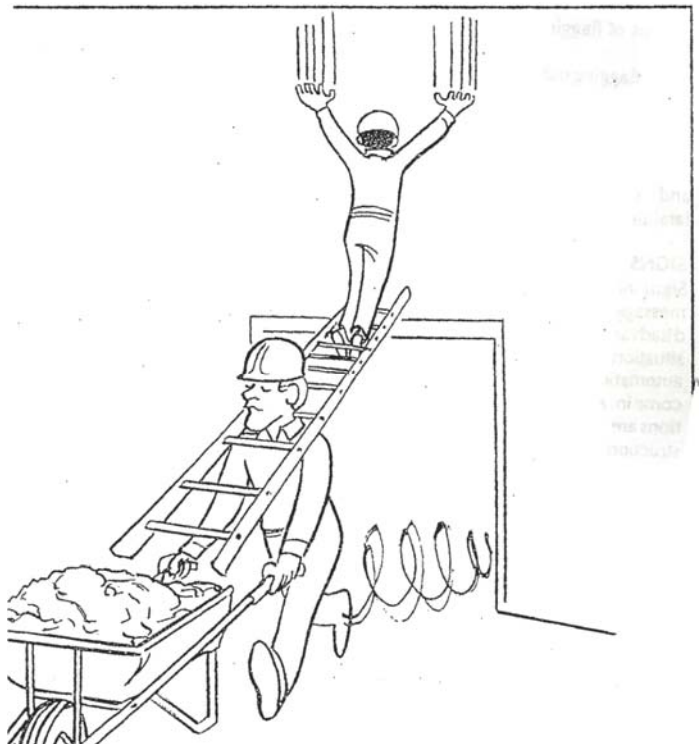
5. Place the base of straight ladders out away from the wall or edge of the upper level about one foot for every four feet of vertical height. Don't use ladders as a platform, runway, or scaffold.
6. Tie, in block, or otherwise secure the top of straight ladders to prevent them from being displaced.
7. To avoid slipping on a ladder, check your shoes for oil, grease, or mud and wipe it off before climbing.
8. Always face the ladder and hold on with both hands when climbing up or down. Don't try to carry tools or materials with you.
9. Don't lean out to the side when you're on the ladder. If something is out of reach, get down and move the ladder over.
10. Most ladders are designed to hold only one person at a time. Two may cause the ladder to fail or throw it off balance.

Care of Ladders

Take good care of ladders and they'll take care of you. Store them in well ventilated areas, away from dampness.

Remember

These tips on ladders may save you from a ladder that tips.



Date:	Company Name:	
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Slips, Trips and Falls



Everyone Is at Risk

More than 200,000 people in the United States are injured on the job from slips, trips and falls every year. In fact, fall injuries rank second only to auto accidents.

Application: People who work in high-risk environments are more likely to be injured by falling than by job-related hazards. Most slips and trips end up in falls, but they each have special qualities that should be addressed.

Slips

A slip occurs whenever there is too little friction or traction between your feet and the surface you are walking on. Three common causes of slips are:

1. Constantly Wet Surfaces

- Shorten your stride to keep your center of balance under you.
- Walk with your feet pointed slightly outward, creating a stable base.
- Make wide turns at corners.

2. Occasional Spills

- Wear slip-resistant footwear appropriate for your job.
- Use abrasive strips to increase traction.
- Post signs to warn of wet areas.
- Clean up spills when you see them.

3. Weather hazards

- Slow down to react to a change in traction.
- Wear good quality work boots with slip resistant soles.
- Wear sunglasses when outdoors or in ice and snow to help you see possible hazards.
- Be careful of wet shoes on a dry floor.

Trips

Trips can occur whenever your foot strikes an object and your momentum causes you to be thrown off balance. Trips are most commonly caused by:

1. Lighting

- Always ensure that there is adequate illumination.
- Don't forget to replace burnt out or defective light bulbs.
- Use a flashlight when needed.

2. Housekeeping

- Walkways must be kept free of objects and clutter.
- Carpet should be tacked or taped down.
- Cables and wires should be covered or raised off of the floor.

Falls

Falls can happen anytime you're off the ground and not protected from the fall. Use Fall Protection equipment when needed. Two of the most common fall hazards are:

1. Ladders

- Make sure stepladders are locked into position, use it properly.
- Check the rungs to make sure none are broken, cracked, damaged or dirty.
- Use a stepladder tall enough to avoid using the top two rungs and over-reaching to do the job.
- Always ensure that the ladder is level on the surface that you are working from.

2. Stairs

- Take one step at a time.
- Make sure that your front foot is firmly planted before shifting your weight on it.
- Always use the handrail.
- Keep stairways free of clutter.

Summary

People who work off the ground know the dangers of their work and are more cautious when moving around. But the closer to the ground people get, the less attention they pay, and the more likely it is that a fall will occur. There are many hazards and possible situations that have not been mentioned. Always be on the lookout for hazards. They may be only one step away.

Date:	Company Name:	
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Scaffolding



What is a Scaffold?

A scaffold is an elevated working platform. Most scaffolds found on job sites do not comply with all the regulations. Scaffolds are one of the most cited safety violations by OSHA inspectors. In a recent study, 72 percent of workers injured in scaffold accidents attributed the accident either to the planking or support giving way, or to the employee slipping or being struck by a falling object.

Application: The OSHA standard sets performance-based criteria to protect employees from scaffold-related hazards such as falls, falling objects, structural instability, electrocution, or overloading. It also addresses training and various types of scaffolds, as well as falling object protection, ladders, weather conditions, aerial lifts, stilts, and other matters. It also allows employers more flexibility when using protective systems for workers on scaffolding.

Three Types of Scaffolds

1. Supported scaffolds – platforms supported by rigid, load bearing members such as poles, legs, frames and outriggers.
2. Suspended scaffolds – platforms suspended by ropes or other non-rigid means from an overhead structure.
3. Aerial lifts – vehicle mounted devices used to get a worker to an elevated position.

Four Main Hazards and Method of Hazard Prevention

1. Fall from elevation
 - guard rails
 - fall arrest systems
2. Scaffold collapse or bad planking giving way
 - proper scaffold construction
 - do not overload
 - have competent person check scaffold, as required

3. Struck by falling tools or debris

- barricade the area below the scaffold and forbid entry
- use panels or screens
- build a canopy or net that will contain or deflect falling objects

4. Electrocution

- honor clearance distances required between power lines and scaffolding
- de-energize the lines
- install protective covering

Scaffold Specifics

There are several specific requirements that should be addressed before working on any scaffold. These items should be part of your daily pre-use inspection. If, when you inspect the scaffold, you observe any deficiencies the scaffold should be tagged out, reported to your supervisor, and repairs made either by or under the direct supervision of a competent person prior to using the scaffold.

- Do not use a scaffold that has not been inspected and tagged as completed
- Wheels on a rolling scaffold must be locked during use
- Scaffolding must be capable of supporting at least **4 times** the intended load
- Scaffolds with work platforms of 10 feet or more above the ground or next lower level must be provided with complete guardrails and toe boards
- All work platforms must be completely decked
- Scaffolds must be erected to be plumb and level
- Supported scaffolds with a height to base ratio of more than 4:1 must be secured from tipping
- A minimum distance of 10 feet must be maintained from any overhead power lines

Summary

This is just a small taste of scaffold safety. There is much more that could be taught. Just remember to:

- Use appropriate scaffold construction methods
- Erect, move or alter scaffold properly
- Protect from falling objects or tools
- Ensure stable access
- Use a competent person
- Train on scaffold construction and the hazards involved with scaffolds
- Inspect the scaffold before each shift and after alterations
- Determine all fall protection requirements

Date:	Company Name:	
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Guardrails



Guardrails protect you from falls that can seriously injure or even kill. The amount of protection guardrails provide depends on how they are constructed and maintained. Most guardrails are built of strong materials and are usually solid when first put up. As time goes by, however, guardrails often are abused, weakened, broken, or moved and not replaced.

Missing or Weakened Guardrails

Sometimes sections of guardrails must be taken down so that materials or equipment can be brought in. These sections often aren't replaced or if they are, they're hastily thrown back up. Weakened guardrails are sometimes more dangerous than no guardrails at all, because they give a false sense of security.

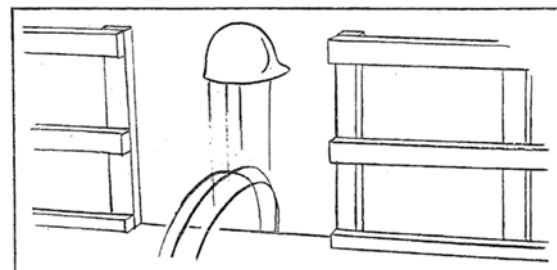
Follow These Rules

We can help avoid guardrail accidents if we follow a few simple rules:

1. As you go about your job, get into the habit of checking guardrails. If you discover a weakened or a missing rail or section, correct the situation if you can. Otherwise, report it so that the hazard can be eliminated.
2. If you bump a rail with material or equipment, check it at once if you suspect you may have weakened it. If you discover you've broken a rail, upright, or toeboard, repair it if you can. Otherwise, report it so that it can be repaired.
3. When repairing or replacing guardrails, remember you're exposed to the very danger that you're providing protection against. Perhaps you should be using a safety belt and lanyard.

Keep Your Guard(Rails) Up

Different types of construction may require different types of guardrails. But the points we've covered today apply to all. If you have suggestions, make them known so that we can continue to keep our guardrails up and our accidents down.



Date:	Company Name:	
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It's The Sudden Stop That Hurts



Each year, falls result in many serious injuries, and approximately 20% of all falls are fatal. This means that for every five persons involved in a falling accident, one dies. Let's spend the next few minutes talking about where falls occur and what we can do to prevent them.

Housekeeping

Good footing is the best way to avoid falls and good housekeeping is the best way to ensure good footing. Scrap lumber; trash; wire; and slippery areas caused by water, grease, or oil can cause falls.

Ladder

Taking ladders for granted has caused many falls. Many workers believe that they can use any ladder for any job. To be safe, however, select a ladder that suits the purpose. Be sure it's in good condition and that you place it securely. Keep both hands free for climbing and always face the ladder when going up or down. Don't carry tools with you.

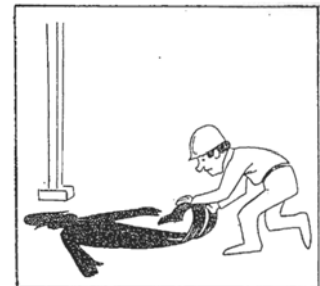
Scaffolds

A scaffold should be solidly constructed like a permanent structure, even if it will be used for only a short time. Be sure uprights are uniformly spaced, plumb, and set on a good foundation. Use mudsills if required. Use horizontal or diagonal bracing to give stability. Provide guardrails and toeboards to help prevent falls. Inspect planking before installation. It should overlap the support by a minimum of 12 inches.

Whenever you're on a single-point or a two-point suspended scaffold, wear your safety belt. Be sure it's tied to a secure independent lifeline.

Floor and Wall Openings

Depending on their size, cover floor openings or protect them with standard guardrails and toeboards. Also, protect wall openings, except for doorways and stairways through which persons could fall. This protection should be substantial and secured to prevent displacement.



Stairways

Falls on stairways are caused by running, carrying objects that block your view, failure to use handrails, or just not paying attention. Watch your step and concentrate on what you are doing.

Remember, it's not the fall that hurts. It's the sudden stop.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

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Fire Safety



In Case of Fire



All fires start small. But with the right conditions, they can spread out of control in a matter of minutes. As a construction job progresses, building supplies, trash and other combustibles may pile up, increasing the chances of a fire.

Sound the Alarm

If you discover a fire, sound the alarm immediately, so that someone can call the Fire Department. Then cautiously size up the situation. If the fire looks small enough to be put out with available fire extinguishers, do so.

And be sure you know the correct extinguishers for electrical and petroleum fires. But don't underestimate the danger. If you're not sure you can handle it, let the Fire Department do it.

Stand By to Help

If the fire can't be controlled immediately, warn all people in the area so that they can get to safety. This is especially important in a building fire. Then stand by to direct the fire fighters when they arrive. The time you save them can be used to bring the fire under control sooner.

Don't join in fighting the fire, however, unless your foreman or the fire fighters ask you to do so. It's not that your help wouldn't be appreciated, but it's best to let experienced people handle this job.

Remember These Steps

Let's review the steps to take upon discovering a fire:

1. Sound the alarm.
2. Cautiously size up the situation.
3. Put out the fire if it's small enough. If not, let the Fire Department handle it.
4. Warn other people in the area.
5. Stand by to direct the fire fighters when they arrive.
6. Help fight the fire only when asked to do so.

Learn Now

There's one other important point. Learn what to do in case of fire right now. Know how to sound the alarm and where the fire extinguishers are located. This knowledge can save lives, property and your job as well.



Date:	Company Name:	
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Gasoline



Gasoline is so commonly used and easily obtained that people forget how dangerous it is. Consequently, many persons are killed or injured every year because of not handling gasoline safely. Keep in mind the points we will discuss today, whether you're using gasoline at home or on the job. Gasoline is manufactured to be used only as a motor fuel. In this way, it can be a useful product. But when used in other ways, it can be deadly.

Have You Ever Done This?

Have you ever used gasoline to clean your hands or to wipe off a piece of equipment? Have you ever spilled gasoline while fueling an engine? Have you ever started a fire with gasoline or smoked while filling a container? All of us at one time or another have violated these and other safety rules when using this potentially dangerous product.

Some Facts You Should Know About Gasoline

- Gasoline doesn't burn. Do you believe that? Well, it's true. It's the gasoline vapors that burn. Gasoline evaporates at temperatures as low as 45 degrees F below zero. The higher the temperature, the faster it evaporates, and the heavier the buildup of dangerous vapors.
- Gasoline vapors are heavier than air and will collect at the lowest point in an area, unless there's adequate air circulation.
- An open flame isn't necessary to ignite gasoline vapors. One spark is all it takes.
- Gasoline can irritate the skin and cause a rash that can become infected. If you get it on your skin, wash it off with water right away. If you get it on your clothing, take your clothing off immediately. You could become a human torch.

You should have surmised from the above facts that it's dangerous to use gasoline to clean tools or parts or to remove grease from your hands.

Gasoline Storage

Don't store gasoline in the wrong kind of a container. Sometimes, glass containers are used to hold this liquid. For example: a man going on a camping trip filled a glass jar with gasoline and put it in the back of his car. As he was driving through the mountains, his car hit a bad bump. The jug broke and the gasoline vapors caught fire. The car burned - along with the driver and his family.

Keep gasoline in a safety can, such as those listed for this purpose by the Underwriters Laboratories. Mark the container with the word “gasoline,” so that people will not mistake it for something else.

An empty gas container is more dangerous than a full one. If the lingering vapors inside the can mix with the proper amount of air and are ignited, a violent explosion will result. That’s why it’s so important to thoroughly clean any empty containers previously filled with gasoline before welding or soldering on them.

Transferring Gasoline from One Container to Another

Transfer gasoline from one container to another only in areas free from open flame and sparks. Clean up any spills immediately. Static electricity can be generated while pouring gasoline from one container to another. One method to prevent this build-up of static electricity is to keep the two metal containers in contact with one another. Or better yet, connect the containers with a bonding wire until you have finished pouring.



Don’t Be Selfish

Today you have seen that handling gasoline improperly can be as dangerous as playing Russian roulette or sticking your head into a loaded cannon. Don’t keep the tips you have learned about gasoline to yourself. Pass them on to your family, so they’ll never misuse this dangerous substance found so often around the home.

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Flammable Liquids



I once heard of a workman who used a flammable solvent for cleaning and spilled some of it on his clothing. After he finished the job, he paused to smoke. The instant he struck the match to light his cigarette, he became a human torch. I've heard of other cases where flammable liquids have caused serious fires, which resulted in a great loss of life and tremendous property damage.

We use many kinds of flammable liquids every day on this job: gasoline, cleaning fluids, paints, and thinners, to name just a few. The danger of these materials can be controlled.

Some Facts You May Not Know

Flammable liquids themselves will not burn, as many people think. But as the liquid evaporates it gives off vapors that mix with the air to form dangerous gases that can be set off by the smallest spark.

Take gasoline, for example. Gasoline evaporates at temperatures as low as 45 degrees F below zero. As the temperature rises, the rate of evaporation increases and more and more vapors are given off. This also is true for other flammable liquids, except that the temperature at which they give off vapors varies with the kind of liquid.

Follow These Common Sense Rules

If we remember a few simple common sense rules when storing, handling, and using flammable liquids, we can help prevent this job, or any of us, from going up in flames.

Keep flammable liquids away from open flame and sparks. This means that you should never smoke around them.

Always use approved metal safety cans or the original manufacturer's container to store flammable liquids. Keep these containers closed when not in use, and never store them near exits or passageways.

Practice good housekeeping in flammable liquid storage areas. Clean up spills immediately and then place the rags you used to do the job in a tightly closed metal container.

Be careful not to get a flammable liquid on you. It not only could burn you if it catches fire, but it could cause painful skin irritation that could easily become infected. If you get it on you, wash it off as soon as you can.

Never try to boost a fire with a flammable liquid. You are in for trouble if the fire flares up.

Don't Trust Your Nose—Ventilate

Don't trust your nose to tell you whether an area or container is vapor free. Not all dangerous liquids give off vapors that you can smell. Some vapors are poisonous as well as flammable. Use flammable liquids only where there is plenty of ventilation.

Vapors given off by flammable liquids are usually heavier than air and collect in the lowest area they can reach. Without good ventilation to dissipate them, you have a potential disaster awaiting that one small spark to set it off.

Read the Label

Carefully read the manufacturer's label on the container of any flammable liquid before using it.

Friend or Foe—It's Up to You

Like many other substances, flammable liquids can make a good friend or a bad enemy, depending on how you use them. Whether at home or on the job, treat flammable liquids with respect and use them for the purposes for which they were made.



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The ABCs of Fire Extinguishers



Just as there is a right tool for every job, there is a right extinguisher for every fire. The class of an extinguisher, identified on its nameplate, corresponds to the class or classes of fire the extinguisher controls. On most construction jobs, we are concerned with Class A, B and C fires. Consequently, the best extinguisher to have on a job is a multi-purpose Class ABC extinguisher, which contains a dry, powdered chemical under pressure. The following describes the classes of fires and the kind of extinguisher that can be used on each.

Class A Fires

Wood, paper, trash, and other materials that have glowing embers when they burn. Extinguisher to Use: For Class A fires, use a Class A or Class ABC extinguisher containing water and should be used only on a Class A fire. Used on gasoline, it can spread the fire; used on electrical fires, it can cause you to be electrocuted.

Class B Fires

These are fires involving flammable liquids and gases, such things as gasoline, solvents, paint thinners, grease, LPG, and acetylene.

Extinguisher to Use: Use Class B or Class ABC extinguishers.

Class C Fires

These are fires in energized electrical equipment.

Extinguisher to Use: Use a Class BC or Class ABC extinguisher.

Some Important Points to Remember

1. Use the fire extinguisher whose class corresponds to the class of the fire.
2. Never use a Class A extinguisher, which contains water or foam, on a liquid or electrical fire.
3. Know where extinguishers are located and how to use them. Follow the directions printed on the label.
4. Keep the area around the fire extinguishers clear for easy access.
5. Don't hide the extinguisher by hanging coats, rope, or other materials on it.

6. Take care of the extinguishers just as you do your tools.
7. Never remove tags from extinguishers. They indicate the last time the extinguisher was serviced and inspected.
8. Report defective or suspect extinguishers to your Supervisor, so that they can be replaced or repaired.
9. When inspecting extinguishers, look for cracked hoses, plugged nozzles, and corrosion. Also, look for damage that may have been done by equipment running into the extinguishers.
10. Don't use extinguishers for purposes other than fighting fires.

Nobody wants a fire. But if one starts, know what extinguisher to use and how to use it.



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The Fire Triangle



Let's talk about what makes a fire and what we can do to prevent one. Fire can be compared to a triangle. Three sides are necessary to make a triangle and three ingredients are necessary to cause a fire. These are heat, air, and fuel. If any one of these three sides is missing, there can be no fire.

Heat

Heat, the first side of the fire triangle, can come from many sources. It can be generated by sparks from welding operations, discarded cigarette butts, electrical shorts, frayed wiring, friction from power tools, and hot exhaust pipes.

Fuel

Fuel, the second side of the fire triangle, may be liquid, such as gasoline or solvents; a solid, such as paper or wood scraps; or a gas, such as propane.

Air

Air, the third side of the fire triangle, contains oxygen which is necessary to sustain a fire. This is one side of the triangle we can't do much about. Air is usually present.

Heat, fuel, and air must be in the proper proportion for fire to occur. It is possible to have these three ingredients without causing a fire. For example, there may not be enough heat or air to ignite the fuel and cause it to burn.

Eliminating the Triangle

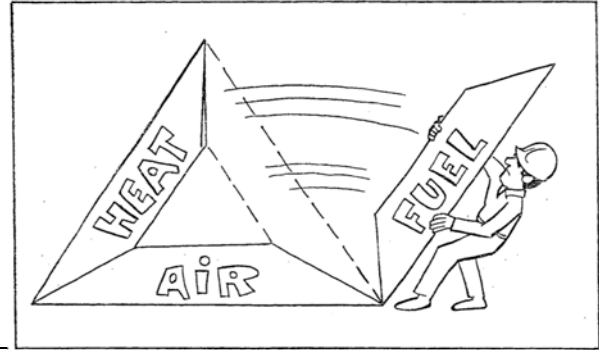
Let's talk about what we can do to prevent the fire triangle from forming. Remember that if you remove any one of the three ingredients, you will prevent or extinguish the fire. We can help prevent fires by doing the following;

1. Maintaining a neat and clean work area, thus preventing an accumulation of rubbish.
2. Putting oily or paint-soaked rags in covered metal containers.
3. Observing all "No Smoking" signs.
4. Keeping all combustible materials away from furnaces or other sources of ignition.
5. Reporting any fire hazards we, personally, cannot eliminate. This includes electrical hazards, which are the source of many fires.

6. Arranging cold weather heating devices so that tarps won't blow into them.

When You Know the Angles

When you know the angles, it's easier to prevent and control fires. Remember the fire triangle: heat, air, and fuel. When you find these three ingredients present, take heed. A fire could be in the making.



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Welding Fires



One of the worst factory fires in history was started by sparks from a portable welding outfit, which ignited liquid in a conveyor drip pan. The French liner, Normandie, which was being refitted to carry troops during World War II, was destroyed by a fire when welding sparks fell into waste wood and excelsior. An aircraft carrier fire in the Brooklyn Navy Yard in 1960 was started by welding sparks and slag falling into spilled motor fuel.

In each case, there either was inadequate protection or no protection of the flammable material from flame and sparks. The ships were steel, but filled with flammable material. The factory was steel, concrete, and glass, but contained flammable fixtures, stock, and process material. Practically anything can burn and be damaged if it gets hot enough. And there's plenty of oil, grease, and other combustible materials on any construction site in addition to the lumber and scrap.

How Welding Fires Start

Fires from welding operations are started by sparks, hot slag, and flame from the torch. Sparks often drop or are carried long distances by the wind. Slag falls on surfaces or materials below. And a welding torch flame can ignite many substances within a radius of several feet. Be familiar with the standard safety rules for welding so you can spot and report any problems.

The Welders' Responsibility

When a welding operation moves into a work area, it's primarily the welders' duty to guard against fire. This means making sure there's no flammable material within range of the flame. Wood, paper or other combustibles should be removed. The welders also are responsible to see that no sparks or slag fall on combustible materials.

Keep extinguishing materials, such as water or sand, on hand if you must weld near combustibles. You may even find it necessary to assign a worker with a fire extinguisher to stand by and put out sparks.

Flammable Liquids

Welders should not be working in any area where there are flammable liquids before checking with the supervisor. If you have to weld or touch any tank or drum that has contained flammable liquids or gas, don't start your work until an approved test shows that there's no danger of vapors present.

Don't take anyone's word that the tank or drum was tested previously. Insist on a test just before starting your work.

Combustibles

Where floors are combustible, welders must place fire resistant material beneath the work area, so that hot slag cannot contact the floor. Wood floors should be swept clean before welding over them, and should be covered with metal or some other material that won't burn. In some cases, it is advisable to wet the floor down.

But remember that this adds a shock hazard, which must be guarded against if you are arc welding. Be sure there are no cracks into which sparks or slag may fall, and never allow this hot material to fall into concealed spaces between walls and floors.

You may have to protect openings, such as open doorways, with a non-combustible curtain. Be sure this curtain reaches to the floor, so that the hot slag can't roll under it. Ask yourself also if wind can carry sparks or slag over the side and down onto storage areas or adjacent property.

Welding Equipment

Welders must keep cylinders a safe distance from where they are working, which means that hoses must be completely uncoiled. You should keep the tanks and hoses behind you, never in front where flame, heat, or slag will strike them. Hoses must be protected to keep trucks from running over them, and people from walking into them or dragging things across them.

Ventilation

Good ventilation is a must for all welding operations. Many of these operations produce fumes that are harmful in heavy concentrations, and good ventilation is the only method of protecting yourself against this hazard. Screens around your work must be placed so as not to prevent good air circulation. Sometimes special ventilating equipment is necessary. If you have any doubt about the adequacy of ventilation on a job, ask the supervisor for his opinion. Don't weld in a small room or tank or other closed place without first making sure the ventilation is good.

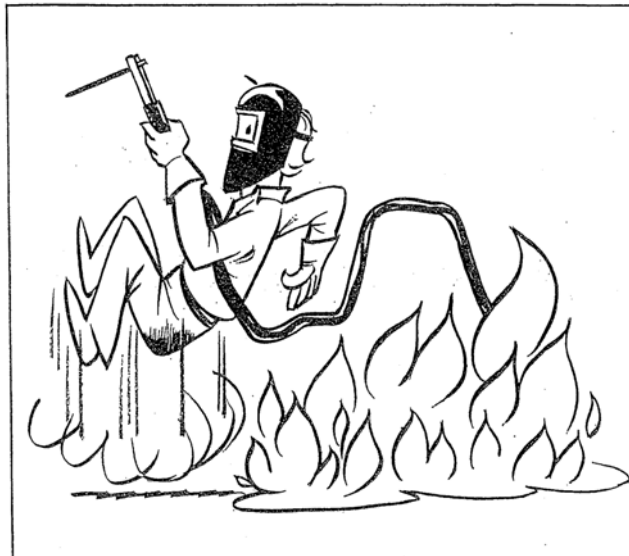
When welders leave their equipment or stop work, they must shut off the oxygen and acetylene at the cylinders, so that no gas can enter either hose. And, of course, the rule for everyone except the welders is: "Hands Off All Welding Gear."

Eye Protection

Eye protection is necessary on all welding jobs, and full face protection is needed on many jobs. The type of protection you've been told to wear on your operations has been proved necessary by experience.

Face and eye protection are needed in many operations performed by welders besides actual cutting and welding. That's why, for instance, electric welders need goggles as well as the regular helmet. Any welder may have to do a good deal of chipping. And this work, usually done with the helmet raised, can throw particles of metal into your eyes.

Basically, however, eye protection is designed to protect you against sparks, slag, molten metal, and flash burns caused by radiation from the welding equipment. If you follow the rules for wearing face and eye protection, you won't have any face and eye injuries from cutting or welding work.



Everyone's Responsibility

Remember that preventing welding fires is everyone's responsibility, whether doing the actual welding or not.

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Refueling Equipment



“Fill ‘er Up!”

When you hear this request at a service station, you can be pretty sure the job will be done safely. Service station operations and equipment are designed with safety in mind.

But what happens when you fill up that front-end loader or portable generator on the job? Do you do it the safe way so you won’t get hurt?

Rules to Remember

Never smoke during refueling operations. And don’t refuel near an open flame. Keep A CO, or an ABC Dry Chemical extinguisher handy, just in case. If there’s a chance of a vehicle rolling while being refueled, chock the wheels.

Before filling the fuel tank, shut off the engine. If the tank is near the engine or other hot areas, such as the manifold or muffler, let the engine cool before filling the tank.

When transferring fuel from a can, mobile tank or fuel truck, keep the spout nozzle in contact with the fuel tank. Few people know this, but as fuel is poured, it can generate static electricity. If a spark ignites the vapors, it’s all over for you.

Don’t spill the fuel because it might ignite when it comes in contact with something hot. And don’t make one of the most common mistakes—overfilling the tank. If the equipment is in the hot sun, the fuel will expand and eventually overflow. Leave enough space in the tank to compensate for expansion or tilting.

After refueling has been completed, be sure all fuel has been drained from the hose and that any spills are cleaned up immediately.

Do It Safely for Your Sake

The next time you “Fill ‘er Up,” do it safely. And you’ll be around to do it again.



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Fire Extinguishers



Fire Safety

Fires can be very dangerous and you should always be certain that you will not endanger yourself or others when attempting to put out a fire. For this reason, when a fire is discovered:

1. Assist any person in immediate danger to safety, if it can be accomplished without risk to yourself.
2. Call 911 or activate the building fire alarm. The fire alarm will notify the fire department as well as other building occupants and shut off the air handling system to prevent the spread of smoke.

If the fire is small (and only after having done these first two things), you may attempt to use an extinguisher to put out the fire.

However, before deciding to fight the fire, keep these things in mind:

- Know what is burning. If you don't know what is burning, you won't know what kind of extinguisher to use.
- Even if you have an ABC fire extinguisher, there might be something in the fire that is going to explode or produce toxic fumes.
- Is the fire spreading rapidly beyond the point where it started?
- If the fire is already spreading quickly, it is best to simply evacuate.
- As you evacuate, close doors and windows behind you as you leave, this will help to slow the spread of smoke and fire.

The Fire Triangle

Three things must be present at the same time to produce fire:

- Enough Oxygen to sustain combustion
- Enough Heat to reach ignition temperature
- Some Fuel or combustible material

Together, they produce the chemical reaction that is fire. Take away any of these things and the fire will be extinguished.

Fuel Classifications

Fires are classified according to the type of fuel that is burning. If you use the wrong type of extinguisher on the wrong class of fire, you might make matters worse. It is very important to understand the four different fire (fuel) classifications:

- **Class A:** Wood, paper, cloth, trash, plastics—solids that are not metal.
- **Class B:** Flammable liquids—gasoline, oil, grease, acetone. Includes flammable gasses.
- **Class C:** Electrical—energized electrical equipment
- **Class D:** Metals—potassium, sodium, aluminum, magnesium, requires metal-X, foam, and other special extinguishing agents.

Extinguisher Types

The type of extinguisher that you will use will depend on the fire that you are fighting. Most extinguishers in use today are the type ABC extinguisher, meaning that this type of extinguisher is suitable for use on either the Class A, B, or C fueled fires. Read the label on the extinguisher to verify that the extinguisher is the correct type for the fire that you are fighting.

Remember to PASS

The secret to successful use of an extinguisher in fighting fires is twofold.

1. Speed – be quick, fires spread rapidly so don't waste time.
2. "PASS"

PASS is the acronym that represents how to properly use an extinguisher when fighting fires.

- **P**—Pull the pin
- **A**—Aim at the base of the flames. Hit the fuel, not the flames.
- **S**—Squeeze the handle
- **S**—Sweep from side to side until the flames are completely extinguished. Start using the extinguisher from a safe distance away and then slowly move forward. Once the fire is out, keep an eye on the area in case it reignites.

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Hand Tools



Hand Tools



Don't Take Hand Tools for Granted

Too many people do so, both at home and at work.

Household jobs usually are light. So you sometimes can get away with using tools improperly or substituting one tool for another. Our work, however, makes rugged demands on tools. If we misuse a tool, or use one that's wrong for the job or in poor condition, it can result in injury or spoiled work.

Choose the Right Tool for the Job

Would you use an axe to drive nails? Obviously not. You'd use a claw hammer. It's the less obvious misuse of tools that gives us the most trouble, like using a screwdriver or a file as pry bar. Trouble also comes from trying to get by with a tool that's not the right size for the job. A common mistake is using a wrench that's the wrong size for the nut, or one with a handle that's too short. This can result in scraped knuckles or a broken wrench.

How many times have you seen a person slip a cheater pipe over a wrench handle for more leverage on a tight nut? In many cases, the cheater pipe slips off the handle and the worker loses his balance and falls. And often it's off a ladder.

Don't take chances. Get the right tool, even if it takes you a few minutes longer. You'll probably save yourself lost time and pay.

Use Only Tools in Good Condition

Sometimes the hammer whose head comes off is less dangerous than the one whose head just wiggles a little. In the first case, we know the hammer is dangerous and fix it. In the second case, we never know when the head will twist enough to glance off the work, or just fly off.

Tools in proper condition have handles and heads that are sound and securely fitted; cutting edges that are sharp and true. It's usually the dull tool that hurts you. Tools should be kept free of dirt and grease. If a tool doesn't meet these qualifications, don't use it. Otherwise, you're asking for trouble.

Use Tools Properly

Very few of us are experts when it comes to using every tool made. If you don't know how to use a tool, don't be afraid to ask someone who does. Here are a few tips for using tools properly:

1. Pull a wrench. Don't push.
2. Use the full handle of the hammer. If you choke up on it, you'll lose control.
3. Always cut away from yourself.
4. Be sure to wear eye protection if there's any chance of chips or flying particles.
5. Don't use a file without a handle.
6. Don't use a chisel or screwdriver as a pry bar.



Carry and Store Tools Safely

If you carry tools in your hands, keep sharp or cutting edges covered and hold them away from you.

Use a tool box or belt when you carry a lot of tools. Don't stuff them in your pockets. Keep the tool box orderly so you can easily find the tool you need without getting cut or gouged.

If your buddy wants to borrow one of your tools, hand it to him; don't toss it.

Hand tool safety depends on the right tool for the job - in proper condition – used correctly - and carried and stored safely.

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Screwdrivers



Intended for One Purpose Only

The screwdriver is intended for one purpose only—to loosen and tighten screws.

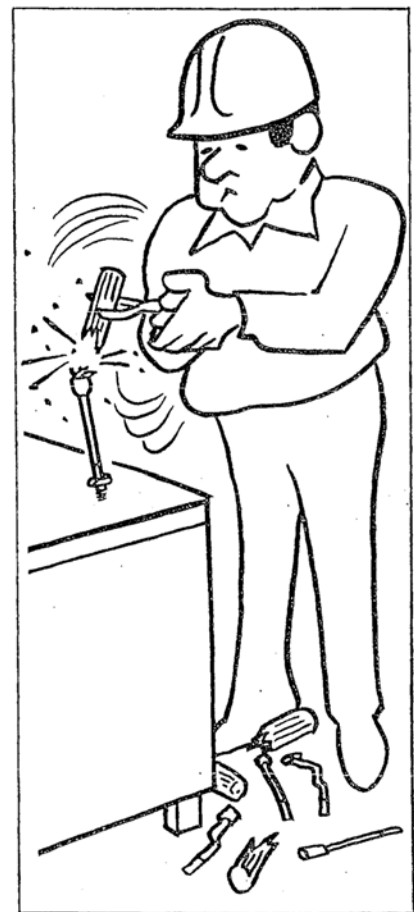
It's not only important to know what a screwdriver is used for, but how to take care of it and use it properly. The following suggestions will enable you to make the best use of this tool.

Proper Care of Screwdrivers

1. Repair screwdrivers that are badly worn or have bent or broken tips. Grind or file the blades square so that the sides that engage the screw are parallel. Be careful not to remove the temper from the blade during the grinding, or it will become soft. A sharp, square-edged blade will not slip as easily as a worn, dull, rounded one.
2. Replace a broken handle. A broken or damaged handle is not only difficult to hold, but you risk cutting yourself or getting a splinter or blister.
3. Keep the tool free of dirt, grease, or burrs.

Proper Use of Screwdrivers

1. Select the proper size screwdriver for the screw, so that the thickness of the blade makes a good fit in the slot. This not only prevents the screw slot and blade from being damaged, but reduces the force required to keep the tool in the screw head. Clean the slots out with a corner of the screwdriver if they are clogged with paint or other debris.
2. Keep the screwdriver square with the screw head. You will avoid damaging the screw and lessen the possibility of the screwdriver slipping.
3. Never use pliers on a screwdriver. Instead, use a square shank screwdriver that is designed for use with a wrench.



4. Always use a vise or place small work on a firm, flat surface. If you hold the work in your hands, you can get a painful injury if the screwdriver slips.
5. Never hammer with the screwdriver handle, nor use the screwdriver as a pry, punch, chisel or lever.
6. Never use screwdrivers for electrical work if they have the blade or rivet extending through the handle. Use only insulated screwdrivers designed for that purpose.
7. If you have a Phillips head screw, use a Phillips screwdriver. Don't use a small standard screwdriver or a large screwdriver held at an angle.
8. Screwdrivers come in various lengths for different jobs. Select the right length so that your hands are working in the clear and not in danger of striking obstructions as you turn the screwdriver.

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Wrenches



A Wrench Doesn't Look Like a Troublemaker

Wrenches seem simple and safe. Yet why do they cause so many accidents?

Why Wrenches Cause Accidents

The answer is that either the correct type of wrench isn't used or improper use of the wrench causes it to slip. The result can range from mashed knuckles to a serious fall. Slipping is caused mostly by using a wrench that is slightly oversized for the nut. The jaws of a properly fitted wrench apply equal pressure to the faces of the nut. But if the wrench is just a bit oversized, the pressure is applied to the corners of the nut where the jaws touch. And the wrench slips. Eventually the jaws of an improperly used wrench can become weakened or sprung. Then the wrench won't even fit the right size head. Some persons try to use shims to compensate for the wrong size wrench, but this isn't satisfactory either.

Another reason why your wrench slips is that it isn't fully seated on the nut or bolt. This usually happens when the nut to be tightened is hard to reach. This situation calls for an offset or socket wrench. It may seem like a lot of trouble to get one, but it's worth it. Always pull on a wrench and adjust your stance to prevent a fall if something should suddenly slip.

Fixed Jaw Wrenches Are Preferable to Adjustable Wrenches

You should use a fixed jaw wrench that fits rather than an adjustable wrench. Box or socket wrenches are even less likely to slip. Pliers are no substitute for a wrench.

Don't misunderstand, however. An adjustable wrench is a good tool when properly used. Always place this wrench so that the pull on the nut comes from the solid jaw and the push from the adjustable jaw.

Cheaters

A common mistake is using a piece of pipe or "cheater" on the handle of a small wrench to increase the leverage. This can place more stress on the wrench than it is designed to take, causing it to break or the pipe itself to slip off. In either case, the person using it can have an accident. Imagine what would happen to you if you were standing on a ladder when the pipe gave way. Don't use a wrench as a hammer or a pry bar. It won't do you or the wrench any good.

Frozen Nut

To free a frozen nut or bolt, apply penetrating oil and use a striking face box wrench.

Taking Proper Care of Your Wrenches Will Help Make Your Work Easier

No, a wrench doesn't look like a troublemaker and it doesn't have to be one, if you use it right. Keep it clean and in good repair and bear in mind the tips we have just pointed out.



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Cold Chisels



Several Important Things to Remember

Although it may look easy to use a cold chisel, it takes a lot of skill. Here are several important things to remember when using these forged, heat-treated tools to cut or shear.

Eliminate Mushroomed Heads

A common problem with all struck tools is mushrooming. The struck end spreads out as a result of hammering. Flying chips and slippage usually accompany the use of mushroomed chisels. Also, the sharp edges can slice a finger like a razor. Properly dress the mushroomed end of the chisel so that sides are chamfered at the top, and the top is flat and at right angles to the sides.

The Cutting Edge

The cutting edge of the chisel must be sharp in order to cut. Sharpen it by dressing it on a grinding wheel, being careful that the original angle of the cutting edge is maintained as closely as possible. Avoid overheating and possible loss of hardness during dressing by moving the chisel against the wheel lightly and frequently dipping the end of the chisel in water to keep it cool.

Keep Free of Dirt

Keep chisels free of dirt, grease, or burrs. Properly store chisels for your protection, as well as the chisel's.

Use the Correct Type and Size Chisel

Always use the correct type and size of chisel for the job. And be sure that you also use a hammer that is heavy enough and large enough for the chisel you select.

Wear Safety Goggles

Always wear safety goggles when chipping, since one of the most common injuries from using a chisel is being struck in the eye with a chip. Protect others by warning them to keep away from where you're working, or by setting up a screen.

Hold Chisels Correctly

There are several correct ways to hold a chisel. Regardless of which you prefer, you should hold it steady, but with a relatively loose grip. If you miss the chisel with the hammer and strike your hand, this grip will help lessen the blow. Of course, the best thing to do is not miss the chisel.

Striking the Chisel

Keep your eyes on the cutting edge of the chisel when you are striking a blow. First strike one or two light blows on the chisel to check your swing and to keep the swing of the hammer in the same plane as the chisel. Then increase the force as required.

Small Pieces

If you're using a chisel on a small piece, clamp it rigidly in a vise. Avoid marring or otherwise damaging the finished surfaces on the piece in the vise. To do this, use copper covers or caps. Then chip toward the solid or stationary jaw of the vise and never toward yourself.

Large Work

Large work may require an extra heavy duty cold chisel and sledgehammer. This calls for a two-man team, one using the sledge, and the other holding the chisel with tongs.

Plan Now

Remember: the time to plan on safety precautions is before you start the job. After you or someone else has been injured, it's too late.



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Driving and Pulling Nails



More Dangerous than You Think

You probably haven't thought much about safety when it comes to driving and pulling nails. Perhaps you believe there isn't much to it. But almost everyone who drives nails eventually winds up with a bruised finger or banged-up fingernail. Other unpleasant things can happen too. A badly hit nail can fly and strike an eye, perhaps putting it out. Loose hammerheads can fly off. You can miss your target and give yourself a nasty wallop. A cracked handle can push a sliver into your palm. And it's likely to become infected if you don't get first aid immediately.

A Knack to Driving Nails

Learn to drive nails quickly and cleanly. The first step is to be sure the hammer is in good condition. The head must be set at the proper angle and fit good and tight. The handle must be smooth, straight grained, shaped to give a good grip, and of the right length and weight to give good balance. The hammer face is important. It should be in good condition and not chipped or worn away from the shape the manufacturer gave it. Always use the right size hammer for the nail.

There is an increase in the use of steel shank hammers. Basically, the same precautions apply that we have recommended for wooden handled hammers.

How to Do It

Drive the nail so that the center of the hammer face always meets the nail head. If it doesn't, the nail may fly at the first blow or bend at the second. It requires practice to hit a nail right every time. Learn to groove your swing; that is, make the hammer head go through the same path to hit the nail head, always dead center and at right angles.

Pulling Nails

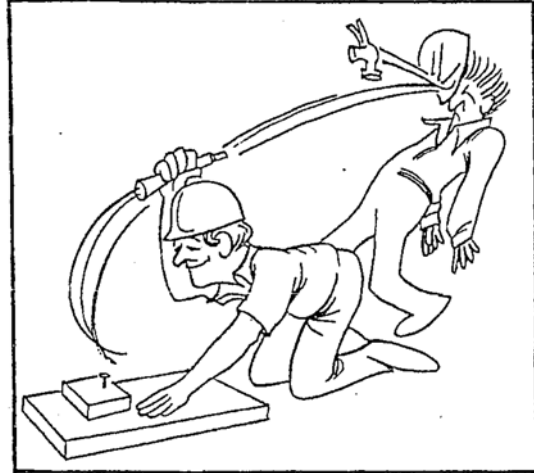
Remember, nails left in old form lumber, packing crates, or in lumber from wrecking operations are like a snake's fangs. Pull these nails out immediately or bend them over. You may be the one to step on them or rip your hand open.

It's easy to get hurt when pulling nails. One "do-it-yourselfer" tried to pull a 40-penny spike with an ordinary claw hammer. When it didn't come out, he threw his weight into it. The handle broke and his knuckles landed with a wallop on the edge of the beam. Two of them were broken. He should

have pulled the spike up until he could get a pry bar on it, then placed a block of wood under the bar as a fulcrum to increase the height as more of the nail was removed.

Learn the Knack

Driving and pulling nails is not as simple as it seems. But once you've got the knack, you can do it efficiently and reduce your chances of getting hurt.



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Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Hammers



How many kinds of hammers are there? Actually, there are about 15, including claw, sledge, bricklayer's, peen, chipping, tack, and soft-faced. Maybe you can think of others.

The following suggestions can help to keep you from injuring yourself or ruining the tool, no matter what kind of hammer you use.

1. **Use the Right Type and Size Hammer for the Job.** Use a carpenter's hammer, for example, for driving or pulling nails. Not for striking star drills or cold chisels. Don't use a lightweight hammer for a heavy job. You'll work harder and increase the chances of hurting yourself or damaging the tool.
2. **Strike the Surface Squarely** always using the head of the hammer and never the side. A glancing blow increases your chances of striking a finger or chipping the hammer head. Don't strike one hammer with another. Hammer heads are made of hardened steel, and pieces may chip off and fly.
3. **Control the Hammer** by holding it toward the end of the handle. Beginners have a tendency to choke up on the handle, reducing the force of the blow and making it difficult to hit the target squarely.
4. **Wear Safety Glasses** to protect your eyes against flying chips when striking objects such as chisels, punches, and drills.
5. **Be Sure the Target is Stationary and Firm.** When driving stakes or hitting a large cold chisel, be sure the person holding the work uses tongs. This will protect him from being hit a glancing blow.
6. **Keep Hammers Clean and in Good Shape.** You can get into trouble by using a hammer with a loose or worn head, or one that has a cracked or broken handle.

In baseball its three strikes and you're out. But it takes only one strike when you're using a worn hammer, the wrong hammer—or even when you're using the right hammer incorrectly.

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Hazard Communication



Asbestos Awareness



What is Asbestos?

Asbestos is a naturally occurring, fibrous material that has long been used for insulation and protection from heat and flame. Although it has been very popular in the past, it is now recognized as a very hazardous material which should be avoided. Asbestos containing material (ACM) is the term used to identify a material that contains some asbestos. Some of the ACM's that you may encounter are:

- Cement Pipes
- Cement Wallboard
- Asphalt Floor Tile
- Vinyl Floor Tile
- Acoustical Plaster
- Textured Paints
- Ceiling Tiles
- Spray-Applied Insulation
- Fireproofing Materials
- Electrical Wiring Insulation

These are just a few of the ACM's that are out there today. As you can see asbestos was quite widely used. The problem that this creates is indicated by the statistics for the health effects caused by exposure to asbestos. This year around 3000 people will die from asbestos related diseases. It is estimated that by the year 2020 this number may rise to over 10,000 people per year. Nothing can be done for these people! These diseases are not treatable and may take from 5–50 years for the symptoms to show up.

Effects of Asbestos Exposure

Asbestos is an inhalation hazard, which means that the asbestos fibers are typically airborne and are inhaled into the airway and lungs. These fibers cause damage to the respiratory system and may penetrate the membrane lining the lungs which result in various diseases including, Asbestosis, Lung Cancer and other cancers involving the airway or digestive tract, or Mesothelioma.

- Asbestosis is a serious chronic, progressive disease that can eventually lead to disability or death in people exposed to high amounts of asbestos over a long period. Asbestos fibers cause the lung tissues to scar; when the scarring spreads, it becomes harder and harder to breathe.
- Mesothelioma is a rare form of cancer of the pleura, the thin membrane lining the lungs. About 200 cases are diagnosed each year in the U.S. Virtually all cases are linked with asbestos exposure. This cancer is very invasive and spreads quickly, eventually crushing the lungs so that the patient cannot breathe. It is very painful and always fatal.

Exposure Control

Asbestos is not dangerous if its location is known, precautions are taken and the employees are trained and know what to do. This means that we need to communicate asbestos findings and locations, provide awareness training, and involve the employees. If it is not known that asbestos is present and you identify a possible ACM, stop work immediately, vacate the area and notify your supervisor and/or Safety personnel. Remember, asbestos is perfectly safe unless it is disturbed and dust gets into the air.

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Hazard Communication



How to Work Safely with Flammables and Combustibles

Imagine how you would feel if something you did caused an explosion at work that caused the death of a co-worker. It's a frightening thought. However, it's something that can be avoided if you know how to work safely with chemicals.

Let's Start with the Basics

Not all chemicals are the same. They have different properties. But each one can be dangerous if you don't know about the hazards. Some hazardous chemicals can cause irritations and burns to the skin as well as other harmful physical effects.

Many companies have selected the approved PPE that all employees are required to wear. Personal Protective Equipment (PPE) shall be used in conjunction with other efforts to eliminate hazards such as engineering controls, guards, and safe work practices. Remember, using the right PPE could save your life.

Labels

How do you know if a chemical is potentially dangerous? Look at the label. Labels can tell you a lot about a chemical product. Such as:

- Identity of the material
- Appropriate hazard warnings
- Name and address of the manufacturer
- How to use the product
- Storage and disposal information
- And sometimes first aid measures

Safety Data Sheets

Safety Data Sheets (SDS) is a document produced by the chemical manufacturer. Each SDS has information on specific chemicals. They tell you who made the product and how they can be reached. The SDS can give you important information such as:

- Potential hazards
- Flammability
- Physical and chemical characteristics
- Appropriate Personal Protective Equipment
- Exposure information
- How it should be stored
- Firefighting instructions
- First Aid measures
- Spill and cleanup measures
- Disposal instructions

ADDITIONAL INFORMATION

When you arrive at a jobsite one of the first things you should do is:

- Find out the location of the jobsite SDS book. Each jobsite should have one.
- Find out where chemicals are stored
- Find out where the smoking areas are located. Sparks from cigarettes can lead to a fire.

You should never use plastic or glass jugs, bottles or buckets. Open containers can spill, glass can break and some chemicals can melt plastic. Use only approved containers for the chemical you are using. Be aware of the fumes and vapors that are escaping in the vicinity of co-workers and ignition sources.

Good housekeeping is essential around chemicals. The area around where they are stored and being used must be kept clean. If something bad happens, poor housekeeping can delay fire suppression and rescue operations and help to spread a fire or chemical to other areas.

By simply reading the labels we can go a long way to making our jobsites safe for everyone.

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Power Tools



Table Saws



No Single Satisfactory Guard

No single satisfactory guard has been developed for the ordinary wood table saw. Why? Because so many different kinds of jobs are done on these saws. Each individual kind of sawing job can be well guarded. But no single guard can protect us on all operations. Be sure you know the safe way to perform each operation. And be sure to do it that way. Table saws probably cut off more fingers than any other kind of machine.

Examine the Safety Devices

Is the guard the kind that rides on top of the work? It should be for all ordinary sawing, particularly ripping. See that it moves up and down freely without play. Saws should have anti-kickback dogs and spreaders. See that the anti-kickback dogs move freely and are sharp enough to dig into the stock if it starts to kick back. See that the spreader is close to the saw teeth, stiff, and well secured. Check the guide (fence) to make sure it lines up parallel with the saw blade. Then set it for the cut you want.

Check Your Footing

When you have a sawing job, check your footing. Be sure the floor isn't slippery and there isn't anything for you to stumble over. Place your feet securely and comfortably. See that there is nothing loose on the saw table to get in the way. Be sure there is enough light so you can see what you are doing.

Stand in the Right Position

If you have more than a piece or two to rip, place the stock on a hand truck or where you can easily reach it from the saw table. Stand far enough right or left of the line of the saw blade so that a kickback will miss you. But not so far that it's awkward to feed the wood trough. Make sure no one else gets behind the saw while you are ripping. In some shops or on some jobs, an extension is added to the saw table, so that the operator can't stand directly in line with the saw blade. It also permits long stock to be controlled more easily.

Avoid Kickback

Unless you have seen a kickback, you don't realize how vicious one can be. Those saw teeth may be moving from 10,000 to nearly 20,000 feet per minute. The teeth at the tip of the saw blade are running toward you. If they get caught in the wood, they'll shoot it right back the way it came.

Saws don't kick back if they are treated right. If used correctly, a properly mounted saw blade, in good condition, will cut its way cleanly through the wood. But if you don't feed the wood in straight, it will get caught against those up-running teeth. The saw may grab it, lift it up, and throw it back.

Some people will tell you that the way to prevent kickback is to keep the saw as low as you can and still have it cut through the wood. They are right, if those teeth are sharp so they'll cut clean. And if the stock is fed straight. The amount of set a saw has will also have a bearing on how it cuts. Slide the material smoothly ahead along the guide and through the saw. Be sure to keep it against the guide all the way through.

A good way to have an accident is to use the saw without a spreader, especially when cutting green or twisted wood. The spreader is located right after the blade to keep the stock from binding. The anti-kickback dog should be used, too, because the wood might bind against the teeth before it reaches the spreader.

Keep Hands Away from Blade

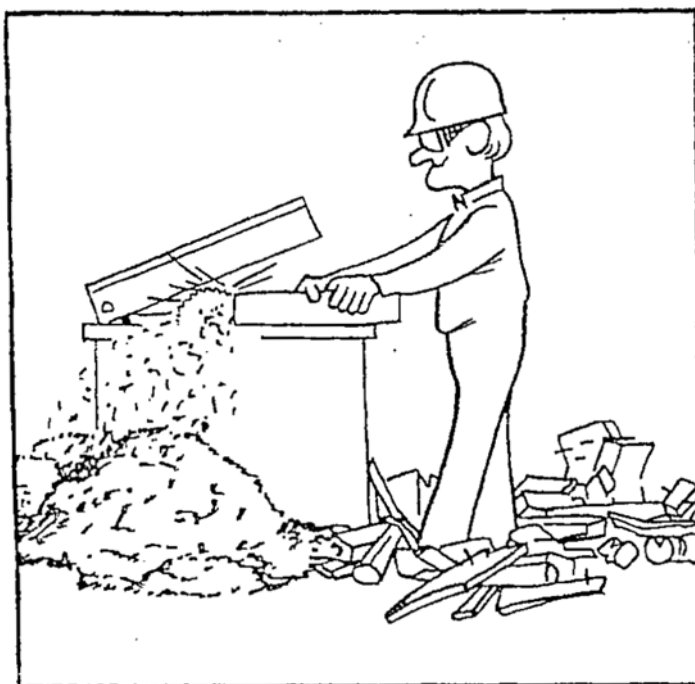
Always keep your hands a safe distance away from the saw blade, at least six inches and preferably twelve inches. You can do this by using a push stick or push block. If the stock or block is made to fit the lumber and has a good handle, you can do a better job with it at the finish of the cut than you can using your hand only. And if something should go wrong, you won't lose your hand.

Don't Crowd the Saw

Don't crowd the saw. A blade in good condition will take the wood easily. It will almost feed itself. If it doesn't, something is wrong.

Gas-Fueled Saws

If table saws are gasoline powered, there is the possibility of fire. Housekeeping becomes doubly important. Mufflers should be tight and no sparks should be emitted during operations. Engines should be shut off and allowed to cool before refueling. Spilled fuel should be cleaned up before restarting the engine. If a funnel is needed, use one. Belts should be covered with guards at all times.



Protective Equipment

Whenever using a power saw, don't forget to protect your eyes by wearing your safety goggles.

Housekeeping

Whatever kind of a saw you are using, gasoline powered or otherwise, good housekeeping is important. Continually pick up sawdust and scrap that accumulates near the saw. And also keep a fire extinguisher handy.

It's up to You

Because there is no single satisfactory guard for table saws, the main responsibility for avoiding accidents is up to you.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Powder-Actuated Tools



As Dangerous as a Firearm

Powder-actuated tools drive studs by power from an explosive charge. Their operation is similar to a firearm and they can be just as dangerous if used carelessly.

Proper Instruction a Must

Would you want to work around someone using one of these tools who doesn't know the first thing about it? You could be endangering your life if you did. You also could be risking the lives of others if you attempt to use this tool without proper instruction. In many states you must be formally trained and licensed to use powder-actuated tools. There are several makes of these tools and no two are just alike. Before using one, thoroughly study the manufacturer's instructions.

Many Hazards Involved

Many hazards are involved in using these tools. These include the following:

1. Flying particles of dirt or scale, or particles discharged from the work surface the stud enters.
2. Using too heavy a charge for the material. This can result in the stud being shot completely through the work.
3. Studs ricocheting if the tool is not held properly or is being used on too hard a material.
4. Fire hazards from using the tool when flammable or explosive dust or fumes are present.
5. Using the tool powder charges in firearms or using firearm blanks in powder-actuated tools.

Before Using

Test the tool each day before loading to see that the safety devices are working. Follow the manufacturer's test methods. If the tool does not work properly, do not use it until it has been properly repaired.

Inspect the tool before using to ensure that it is clean, all moving parts operate freely, and the barrel is free from obstructions.

Make a thorough study of each job. Know the types of materials you'll be driving into, so that you can select the proper stud and cartridge. Also know what is on the other side of a wall as well as what is inside it, such as electric wires and pipes.

Tool Handling

Never point the tool at anyone. Don't let bystanders stand too close to the operator. Clear people from the area on the other side of partitions being worked on. Don't fire studs into cast iron, high carbon or tempered steel, armor plate, rock, glazed brick, tile, or glass.

Load immediately before firing only. Never carry a loaded tool from one job to another.

Always wear adequate eye protection when using these tools. This applies to both you and your helpers.

Hold the tool perpendicular to the work surface. Don't try to start too close to the edge of the work surface. There is a chance of material cracking or spalling. Unless the tool manufacturer recommends otherwise, minimum edge distances of one inch for steel and six inches for concrete are suggested.

Never place your hand over the muzzle of a loaded tool. Don't rest the tool against your body when loading or making adjustments.

Don't drop or throw powder-actuated tools. The chance of accidental discharge is great.

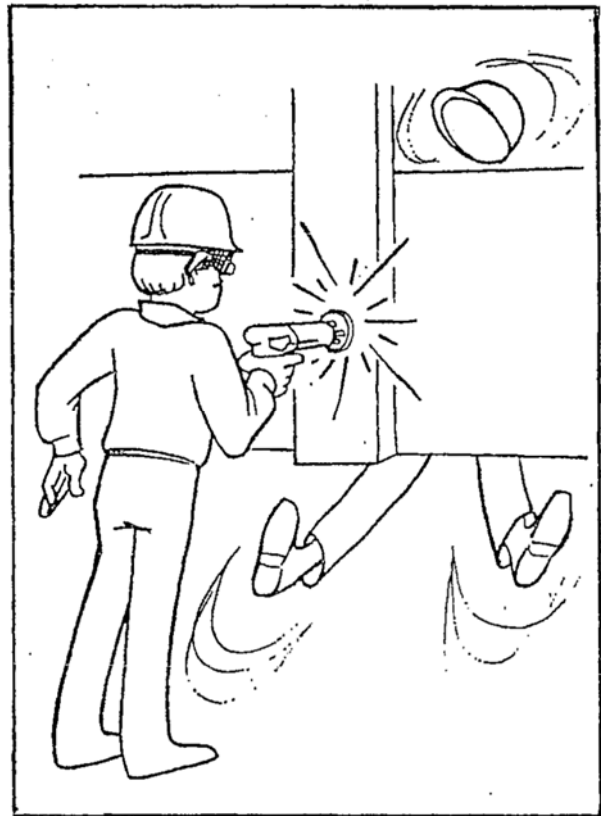
Never fire close to or through pre-drilled holes. This can cause the fastener to ricochet.

Always keep powder-actuated tools, studs, and cartridges in a safe place when not in use, preferably under lock and key. Don't leave tools or accessories unattended, even for a short period of time. The charges are much more powerful than firearm loads and should be used only in powder-actuated tools.

Jams and Misfires

Never try to release a loaded tool that has jammed in the firing position. Place it in a safe place and contact the manufacturer's representative.

If a misfire occurs, hold the tool against the work surface for 15 to 30 seconds. Do not remove the tool from the work surface when opening the tool and removing the defective load. Check the manufacturer's recommendations for disposal instruction in case of a misfire. Do not throw loads into trash containers or leave them lying around.



Maintenance

All types of tools need to be properly maintained to do their job effectively. Powder-actuated hand tools are no exception. Follow the manufacturer's instructions for maintenance, inspection, and cleaning.

Your Life Can Depend on It

Powder-actuated tools are work-savers and time-savers. Know how to operate them correctly. Your life can depend on it.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

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Comments: _____



Chain Saws



Chain saws are a useful piece of equipment, but present hazards that can cause cuts, bruises, and strains. There also is the danger of fire.

Review Instructions

Before attempting to operate a chain saw, or any other power equipment, thoroughly review the manufacturer's instructions on operation and maintenance. If these aren't available, be sure to get thorough instructions elsewhere.

Wear Personal Protection

Wear snug fitting clothes, and be sure you're not wearing any jewelry that can get caught in the chain.

When working in areas where there may be falling objects, wear a hard hat. Wear safety goggles to protect your eyes from twigs, sawdust, and flying wood chips. Also wear safety shoes to protect your feet in case you drop the saw or a heavy log on them.

Chain saws are noisy tools, so if you plan to use the saw for more than a few minutes, wear hearing protection.

Before Starting

Check the saw for loose fittings, proper chain sharpness and tension, loose sparkplug, dirty air filter, frayed or worn starting cord, or a missing or defective muffler.

The chain saw will do the best job for you only if it's properly maintained. A few minutes checking the saw and correcting any defective condition is time well spent. Of course, there are some repairs that are best left to someone experienced in fixing chain saws.

Fueling

Most chain saws are powered by a two cycle engine, which requires an oil gasoline mixture. Follow the manufacturer's mixing instructions. Use only approved safety containers for fuel. Don't allow smoking and open flames where fuel is stored or handled or while maintaining or operating the saw. Remove any fuel or oil spills from the saw before starting.

Give the saw a chance to cool off before refueling. Cylinders and mufflers can get hot enough to ignite gasoline if it comes in contact with them. Start the saw away from the fueling area.

Operation

Check the area to be sure all bystanders are clear of the cutting site. Check the material to be cut for nails or wire imbedded in it. Plan a path of retreat away from the line of fall, so that you can safely and quickly move out of the way.

Hold the saw firmly and away from your body and other obstructions before starting. Don't allow the chain to touch anything.

The best way to control the saw is by keeping a firm two-handed grip on the handles.

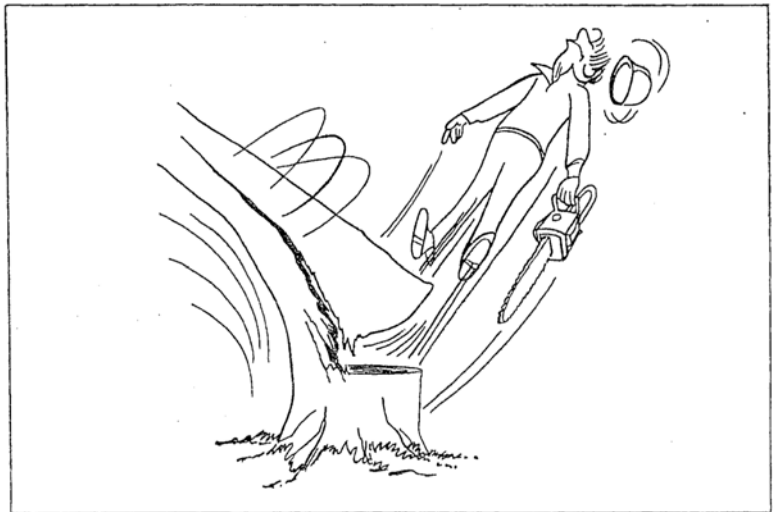
Cutting Hints

Avoid cutting wood directly overhead or at distances away from you that would require you to give up safe control of the saw. If possible, stand on the opposite side of the tree trunk when trimming felled timber. Then if the saw slips, you have the trunk between you and the saw.

Sometimes branches are under tension. Check for this and position yourself so you won't be struck.

Take care to prevent pinching the guide bar and saw chain. If the saw becomes bound, shut it off. It is preferable to use wooden wedges instead of metal ones to free the saw, since they minimize damage to the guide bar and chain.

When the tree is ready to fall, idle the saw and call "timber-r-r" even if you don't think anyone else is in the area. Play it safe—that's the smart way! As the tree begins to fall, shut off the saw and follow your safest path of retreat. Watch for rebound of the tree butt. In an emergency, consider your own safety above that of the saw or other equipment.



You'll Learn by Experience

There are many "ins and outs" we haven't discussed about chain saws that can be gained only by experience. We have covered the basic "common sense" precautions you should take whether you are using a chain saw at work or at home. If you follow this advice, you'll get the job done quickly, easily, and, most important, with a lessened chance of having an accident.

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Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

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Portable Electric Tools



Each year many workers on construction sites suffer electric shock using portable electric tools and equipment. The nature of the injuries, including those caused by ground faults, ranges from minor injuries to serious secondary injuries. There also is the possibility of electrocution.

A secondary injury occurs when a worker recoils from an electric shock and, as a result, sustains an injury. Depending largely on the surrounding physical conditions, such an accident can result in a bruise, a broken bone, or a fatal fall.

How Electrocution Occurs

Electrocution occurs when the shock current exceeds 70 milliamps, or thereabout, causing ventricular fibrillation and death. Typically, electrocution occurs when employees contact electrically energized parts. It is usually the frame of the tool that becomes accidentally energized due to an electrical fault, providing a conductive path to the tool casing. This conductive path can occur instantaneously or can develop gradually over a relatively long period of time. If a worker contacts an energized tool, an unwanted path or circuit of electricity develops from the tool through the worker to ground.

The amount of current that flows through the worker depends, primarily, upon the resistance of the fault within the tool, the resistance of the worker, and the resistance of the path from the worker back to the electrical supply.

Moisture in the atmosphere may contribute to the electrical fault by intensifying both the conductive path within the tool and the external path back to the electrical supply. Moisture also may increase the severity of the shock by decreasing the worker's contact resistance. Consequently, the extent of the hazard increases with an increase in the amount of moisture at the job site.

Methods of Protection

One method of protection against injury caused by an electrical fault is the use of an equipment grounding conductor commonly known as the 3rd, or green, wire. This equipment grounding conductor grounds the exposed, noncurrent-carrying, metal parts of tools or equipment and carries off the leakage and fault currents, thus limiting the voltage on the tool frame by providing a low resistance path to ground. This provides protection to tool users.

Fuses or circuit breakers, on the other hand, will trip; thus shutting off the flow of current at 15 or 20 amperes. These provide protection from a fire safety standpoint but won't protect you, the tool user.

Another method of protection is the utilization of a ground-fault circuit interrupter (GFCI). This device continually monitors the current and detects current leaking to ground via a path outside of the circuit conductors. If the leakage current to ground (either through the equipment grounding conductor or through a person) exceeds the trip level, the circuit is interrupted quickly enough to prevent electrocution.

Points to Remember

Regardless of what type of protection is provided, there are certain things you should do to protect yourself.

1. Before you use any portable electric power tool, inspect the plug, cord, on-off switch and housing. Look for cracked, broken or frayed insulation, exposed wires or connections, and for any evidence of damage in general.
2. If you find any of these things, properly tag the tool and turn it in for repairs. Don't use it!
3. After you've checked out the tool, you still have done only half the job. Now check out the extension cord or outlet you plan to plug into! Look for the same things you looked for when inspecting the tool—evidence of damage and exposed conductors.

One last thing before you plug in and start work: Check the outlet, extension cord, tool and work area to determine if they are clean and dry.

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Comments: _____



Electric Power Tools



Power tools come in a wide variety. But no matter which you use, knowing and practicing “common sense” rules will reduce your chances of having an accident.

Select the Best Tool for the Job and Know How to Use It

If you’re unfamiliar with the tool, follow the manufacturer’s instructions, or ask someone who is familiar with it to show you how to use it. Be sure it’s grounded by a three pronged plug or is double-insulated.

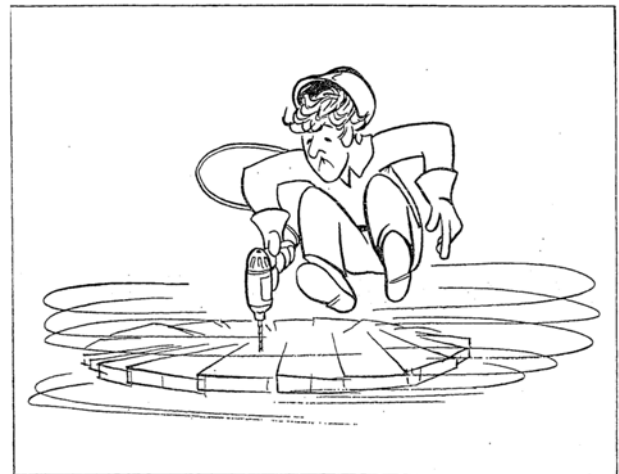
Inspect for the Following Conditions

Don’t use a tool that has any of the following:

- Defective or broken insulation or cord.
- Improper or poorly made connection to terminals.
- Broken or defective plug.
- Loose or broken switch.
- Badly sparking brushes.

Make Sure Guards Are in Place and in Working Order

Don’t use any accessories except those designed for the tool.



Before Starting the Tool

Remove any chuck or adjusting key. Whenever possible, secure the work with clamps or by putting it in a vise. Be sure you have a solid footing.

Ask Yourself if You’ve Forgotten Anything

Are you wearing personal protective equipment, such as safety glasses, hard hat, safety shoes, or whatever is required for the particular job? Are you wearing jewelry or loose clothing that could get caught in moving parts?

Don't Use Electric Tools in Wet or Damp Locations

If this is impossible, stand on a rubber mat or wear rubber gloves. Under the right conditions, one-tenth of an amp from a shorted tool is enough to kill you.

Pay Attention to Your Work Area

This means keeping it as clean and well lighted as possible. Know where fire extinguishers are. In explosive atmospheres, use only approved tools.

When Not Using the Tool

Disconnect it when you're through with it, or before making an adjustment or changing a blade or bit. Don't carry the tool by the cord.

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Powder-Actuated Tools II



Always Remember—SAFETY FIRST!

Anyone who uses any type of powder-actuated tool must first be trained in its use and care. The powder-actuated tool is a single shot handgun and should be treated with extreme care.

Some basic rules for powder-actuated tools:

- Never place your hands or fingers in front of the muzzle end of the tool.
- Never alter or manufacture parts or devices for the tool.
- Operators and bystanders must wear Personal Safety Gear at all times.
- Always post signs indicating powder-actuated tools are being used within 50 feet of where the tool will be operated.

Before You Load the Tool

Always make sure the tool is unloaded and then do a function test on the tool to ensure that it is working correctly. Then check the material that the fastener will be going into by doing a center punch test or a pre punch test. Attempt to drive a fastener into the material and examine the results. Test the tool and the fastener using the lowest load available, then move up if required.

Operating the Tool

- Always point the tool away from people.
- Always follow the manufacturer's recommendations for selecting the load size.
- Read and follow the manufacturer's recommendations for locating the fastener when close to an edge.
- Never fire the tool when explosive or flammable materials are present.
- Never fire the tool without a fastener.
- Always hold the tool perpendicular to the working surface.
- Never fire into materials that are very brittle or too soft, such as cast iron, tile, glass, or sheet rock.
- Never fire through or into an existing hole.

- Should you decide not to fasten after the tool has been loaded, always remove the load first then the fastener.

If a problem occurs during use, the following procedures should be followed:

- If the tool does not fire after pulling the trigger, continue to hold the tool in place for 30 seconds.
- Carefully remove the load and place it in a bucket of water or other nonflammable liquid.
- Never carelessly discard live loads or misfired loads.

Handling and Storage of Tool, Fasteners, and Loads

You should never leave a loaded tool unattended. If you are going to leave the tool for any amount of time, the tool should be unloaded, placed into a safe condition, and placed back into the storage case. Unused loads should be replaced in the box and always stored or carried separate from the fasteners.

Cleaning, Maintenance and Testing

- Always ensure that the tool is unloaded when handling, cleaning or maintaining.
- Make sure that the tool is clean before use.
- Check the functioning of the tool, without a load or fastening device, by pushing down on the working surface and dry firing the tool several times each day.
- Perform a function test several times before using the tool for fastening.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Machine Guards



Machine Guards Can Save Your Life!

How Well Do You Know Your Machine Guards?

Machines and power tools are inherently dangerous. No matter what the machine or power tool, chances are there is a way to get hurt with it. This is why certain machines and power tools have guards installed either by the manufacturer or by us. The guards are designed to prevent you from coming into contact with the dangerous parts of the machine or tool. If the guards were not in place, there is a chance you could suffer a severe injury such as crushed fingers, amputation, a burn or blindness.

Some Basic Rules for Guards

- Inspect all guards before operating any machinery or power tools.
- If guards are missing, damaged or loose, tag the machine or tool out, report it to your supervisor and do not use the machine or tool until repairs are made.
- Never remove or tamper with any guard.
- If you need to remove a guard, first lock out and tag out the power source.
- Do not adjust guards while the machine or tool is energized.

Be Familiar with Your Machines and Power Tools

You should know the possible hazards connected with any machine or power tool that you use. Once you know the hazards, you can better understand the need for machine and tool guards. We want you to know how to use the safeguards on your power tools and machines correctly so that they can do their jobs. If you haven't had this kind of training for the machines or tools you operate, tell a supervisor immediately. Once you know what the guards look like, where they are located and how they operate, you are able to tell if one is missing or not functioning correctly. You should never use a machine or tool if the guard is damaged, missing or inadequate.

Machine and power tool guards are designed to protect you. They can only do their important job with your help.

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Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

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Heavy Moving Equipment



Moving Equipment



The best way to avoid danger from self-propelled units, such as cranes, dozers, and trucks, is to keep your eyes open and stay out of the way. The operator does his best to keep from running over anyone. But with all the commotion on the construction site, he might not see you. And don't depend on hearing a horn or an alarm. A construction site, as you know, is not only busy, it's noisy.

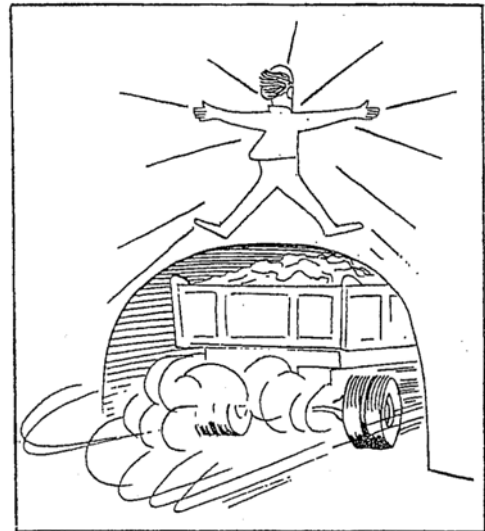
Be especially careful when a vehicle is backing up. The operator should ask his foreman to direct him into the space. But sometimes he doesn't. So, since he can't see you, you have to watch out for him. Never take a chance and dart behind a vehicle that's backing up. If you slip and fall, you've had it.

Riding on or in Vehicles

Don't ride on any vehicles except those intended to transport you on or between jobs. This goes for the running board or drawbar of a unit, loaded trucks, or the bucket of a bucket loader. Riding on the top of a load is especially dangerous. You may fall off if the load shifts or be crushed when going under low clearances. When riding in transport vehicles, keep your arms and legs inside where they belong.

Walking Beside Vehicles

Don't walk alongside moving equipment. You can be killed or injured if the vehicle slides or turns, or if the load shifts. Don't walk under loads on cranes or hoists. Be especially careful not to touch the frame of a crane when there are power lines in the area. If the crane touches one of them, you'll be electrocuted. Remember, too, that electricity can jump several feet, depending on voltage and weather conditions. So, in addition to not touching the crane, stay well clear.



Other Equipment

Not only vehicles, but moving equipment of any kind is dangerous. If, for example, you're working on portable staging, scaffolding, or work platforms, stay off while it's being moved unless it is designed for you to be on it.

Stay Alert

Stay ahead by not getting behind (or alongside of) moving equipment. The more you're alert, the less chance you'll have of getting hurt.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

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Working Around Cranes



Experience Can Be the Worst Teacher

Experience teaches us a lot about working around cranes. But often the lessons are costly.

For example: A laborer carrying a bag of cement walked between a crawler crane and a building column. The crane swung around and fatally crushed him between the counterweight and the column.

On another job, a workman was leaning on the crane frame, talking with one of his buddies. The load came in contact with a live powerline and he was electrocuted.

Today, we'll discuss things we should and should not do when working around this equipment.

Stay Out from Under

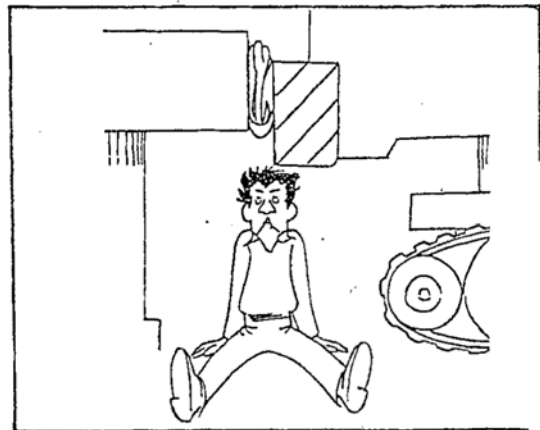
It's a smart move on your part to stay out from under suspended hooks and loads. There's always a chance that during a lift, the load could shift and fall. It may be a slim chance because of the good rigging techniques we use. But once is all it takes to cause a serious injury or a fatality. Also stay clear of swinging loads. That big "I" beam can squash you like a bug if you get in the way.

You're Not Safe When Not Seen

Remember, too, that the crane operator may not see you. He's concentrating on moving his crane into position or swinging his load. Think of the swing area of the crane as "no-man's land." And stay out. The crane will have no sympathy if you get in the way. And it won't come out second best. I'll guarantee that.

Other Dangers

Have you ever heard of a P.L.P.? It stands for Public Leaning Post. And a lot of people think that's what the crane is. They're asking for a shocking experience if the load or boom touches a live wire. So don't lean



on the crane. Stay clear. It's too bad the workman we talked about earlier didn't take this advice. He'd still be around today.

Of course, with all the overhead work going on, we always should wear our hard hats. Concrete slopped out of a lifted bucket can crack an unprotected skull.

I don't understand why some persons never use the stairs or personnel hoists. They insist on "riding the hook." And they're asking for trouble when they do. It's one of the most dangerous means of transportation around.

Use Extra Care around Cranes

The crane is a fantastic piece of equipment. It saves us an enormous amount of work. But like anything else that's big and powerful, it can be dangerous. That's why I've taken the time to stress that you be extra careful when working around cranes.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

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Spotters



I'm sure everyone here is aware of the dangers of blind backing. Not only is there the possibility of injuring someone, but of causing property damage. Today we're going to review safety measures necessary to avoid such accidents.

Spotters—an Important Requirement

The first requirement for safe backing is to have a spotter, someone to direct the driver. A spotter is necessary when the driver or operator does not have a full view of the backing path. This holds true for any vehicle or piece of equipment, whether it's a batch truck backing up to a paver, a mixer truck backing into a hopper or hoist bucket, or a materials truck making a delivery. This is the important rule for drivers and operators: "Don't back up unless you have a spotter directing your movement." It's an easy rule to remember. The important thing is to obey it.

The Spotter's Responsibilities

Let's talk about the spotter. This person has to watch out for others as well as for himself, and make sure the vehicle doesn't damage property. This may appear easy. It seems that all the spotter has to do is to direct a vehicle to back up when the path is clear of persons and objects. But there are dangers involved.

Sometimes when you're a spotter, you may have to pass behind a vehicle. If so, stop the vehicle first. As you're passing behind it, extend your hand at arm's length and place it against the back of the vehicle. Then if the vehicle starts to move because the driver's foot slips off the brake or clutch pedal, you'll be able to feel the movement and get out of the way.

When directing the driver, stand at the rear but well to the driver's side of the vehicle. This gives you an unobstructed view of the entire backing path. And the driver can see you clearly.



It's important that the driver understands your signals. So get together with the driver before any backing and explain the signals you will use. In this way you can be reasonably sure there will be no misunderstanding. Always be sure to use the same signals for the same moves. Hand signals are much better than vocal signals. Because of noise, a shouted signal may not be heard or may be misunderstood.

Be Sure You're Seen

Always be sure that you can be seen. In addition to standing well to the driver's side of the vehicle, wear a fluorescent vest. At night, don't blind the driver by shining your flashlight in the rearview mirror. And, day or night, when you walk backwards, be careful not to trip.

Spotters and Drivers Work Together

Togetherness was never so important as when it comes to spotters and drivers of heavy equipment. Working as a team, they not only protect property but the lives of their fellow workers as well.

Date:	Company Name:	
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Mistaken Signals



Signals Crossed—a Life Lost

A worker was driving a concrete buggy onto a hoist platform. Or so he thought! When he arrived where the platform should have been, it wasn't there. The buggy went over the edge. The man fell forward off the buggy and hit the ground 18' below. Why did this fatal accident occur? The hoist engineer thought that a signal had been given and lowered the platform just before the driver got there.

Station Signalmen Properly

How can an accident like this be avoided? The answer is simple: a signalman should be stationed at the elevation where materials are to be loaded or unloaded. The hoist operator should move the platform only after receiving a sign from the signalman.

Signalmen Must Be Qualified

The signalman must be a fully qualified, responsible individual with no other duties. This individual must be the only one the operator of equipment looks to for signals. The signals used must be understood by them both. The signalman and the operator must be alert every minute, so that no signal will be badly timed, incorrectly given, or misunderstood.

No One Else Should Signal—Except in an Emergency

Others nearby should not wave their hands or arms in an attempt to signal the operator. There's just one exception to this rule: "Anyone can give a signal in an emergency". The operator must stop immediately upon receiving such a signal, no matter who gives it.



If for any reason the operator can't see the signalman clearly, the operator must dog the hoist so that we can correct the situation.

Standard Signals Used

So there won't be any misunderstanding, we use standard hand signals for all hoisting equipment moves. These signals have been agreed upon by hundreds of construction and industrial companies, and adopted by the American Standards Association.

Demonstrate the Standard Signals, or Call on a Member of Your Group to Do So.

Signals Used for Many Jobs

In the case we described at the beginning of this talk, a signal was misunderstood and a man killed. The possibility of an accident exists wherever signals are given. This may involve setting off a charge of dynamite, backing a truck, swinging a boom near a transmission line, flagging a railroad crossing, or performing a vast number of operations involving hoists or other equipment.

Whether called a signalman, flagman, or spotter, this individual's actions can mean life or death for fellow workers.

Date:	Company Name:	
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Crane Boom Failure



When a crane boom fails, watch out. As the heavy piece comes crashing down, lives can be snuffed out and thousands of dollars' worth of property damaged. Crane boom failure can be one of the biggest disasters on a construction job; yet it can be caused by poor planning on the simplest lifting job.

Listen Carefully—It May Save Lives

The time to discuss crane boom failure is before it happens, not afterwards. So pay close attention to what we're going to discuss today. The suggestions we're going to make could save lives.

Two Main Causes of Boom Failure

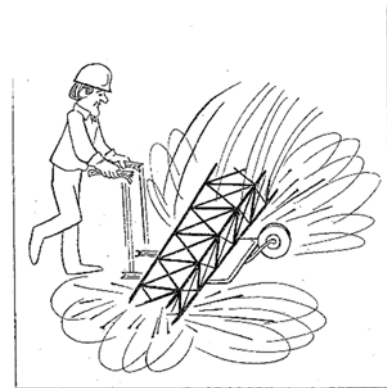
The two main causes of crane boom failure are overloading and improper loading. Some of the specific things of which we constantly should be aware are:

1. Overloading for length, size, or angle of boom.
2. Improper calculation of load weight. Remember to include the weight of all rigging.
3. Boom too high.
4. Sudden release of load on near vertical boom.
5. No boom stop to keep it from going over backwards.
6. Two blocking.
7. Attempting long side pulls.
8. Top block not centered over load.
9. Swinging load and not paying attention to centrifugal force on boom.
10. Load hitting boom.
11. Walking or turning too fast, causing load to swing and twist boom.
12. Failure to use tagline or other control on a load.
13. Chassis not level, causing side bend in boom.

14. Not using outrigger, or outriggers improperly shored.
15. Not enough counterweight, tipping the cab house and chassis.
16. Using boom with twisted members or braces. Makeshift repairs.
17. Improper maintenance.
18. Poor brakes. Worn clutch
19. Failure to check boom.
20. Inexperienced or careless operation. Chance taking. Shortcuts.

Let's Not Make the Headlines

I hope you've taken this discussion to heart. And that you'll always take the necessary precautions to prevent boom failures. Let's lessen the chances of making the headlines with a tragic crane accident on this job.



Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

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Crane Booms and Power Lines



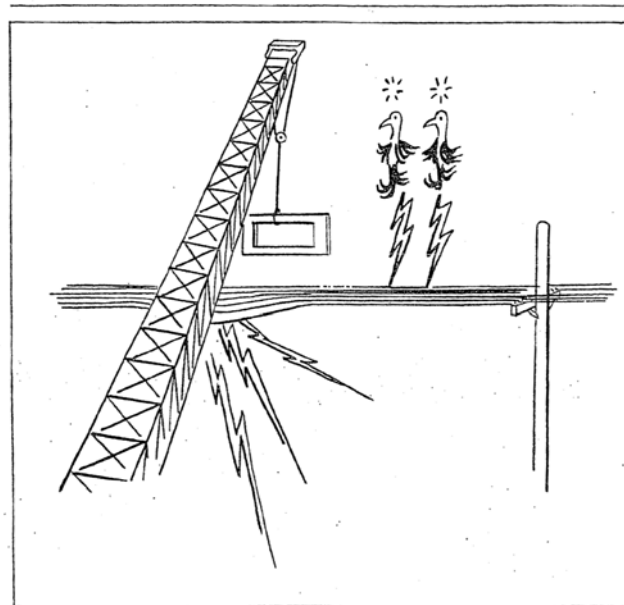
Our topic today is “Electrocution” or “What Can Happen When a Crane Boom Hits an Energized Power Line.”

Most of you who have spent time in heavy construction know of someone who has been killed or severely shocked or burned by such an accident. The cause is generally poor judgment or forgetfulness.

When a job is being planned, power lines should be located and the voltages determined. Provisions should be made to eliminate the danger by having the current shut off or to minimize the danger by setting up safe procedures. Make sure you know if the current is shut off and that you understand the established safe procedures when working around power lines.

A Typical Case

Forgetting is bad enough. But poor judgement is even worse, as illustrated by the following example: A change of work area made it necessary to position a crane under a power line. With the boom in the air, the crane was rolled forward and then stopped. Supposedly, it was far enough away from the line to allow the boom to be lowered without hitting the wires. But the boom didn't clear.



Who Was at Fault?

Who was guilty of poor judgement? The whole crew, which includes the operator and the men who guided the movement and gave the signals. What should the men have done? Obviously, they should have stopped the crane farther back. They also should have kept a close watch on the block as the boom was being lowered, and signaled the operator to stop when it became evident that the boom was going to hit

the power line. Had they done so, the crane could have backed off and completed the lowering without a mishap.

But what about the operator? He knew the length of the boom and the arc it made when being raised or lowered. He should have allowed enough distance to provide clearance, regardless of the ground men's lack of judgement.

All crew members share the responsibility for preventing accidents in situations such as the one described. All must be alert at all times; first to protect themselves, and second, to protect the other person. If someone appears to be forgetful or inattentive, wake that individual up.

Worth Repeating

When you're working close to a power line, use good judgment. Keep the boom, cable block and tag line a minimum of ten feet away. Even greater clearance may be required, depending on voltage and work conditions. Remember that in some cases the current can jump from the power line to the boom or cable without contact being made.

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Project Number/Name:	Meeting Location:	Person Conducting Meeting:

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Problem Areas or Concerns: _____

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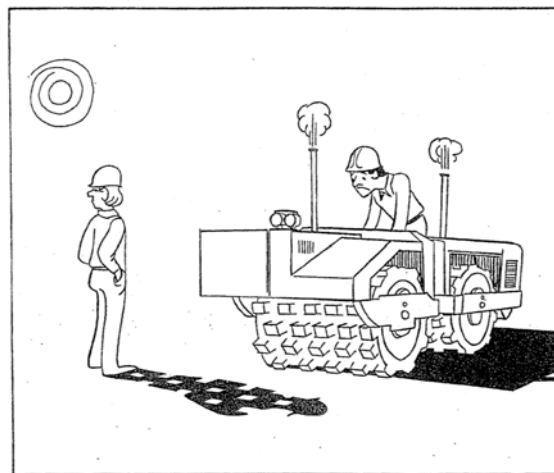
Check Before You Move



You've probably seen the havoc heavy construction equipment can cause. Maybe you know of someone who was killed or badly injured by being run over or backed over. And you may even have seen a parked car that had been crushed. Usually, this kind of accident happens because someone fails to take commonsense precautions.

Bigger and Faster Today

Years ago, heavy equipment was big, bulky, and slow-moving. The operator could see well in all directions. Today, this equipment is heavy, large, and fast moving. Often the operator's field of vision is restricted. So now the equipment operator has to be more alert than he did a few years ago to make sure he doesn't injure or kill a fellow worker.



Take a Walk before You Ride

Before you climb aboard a piece of heavy equipment, walk completely around it. Then you'll be able to see any persons or obstacles in the vicinity. And you'll be able to warn anyone who is in the way that you are getting ready to move the equipment. With all the noise, it is sometimes difficult to hear one more rig start up or start to move. If mechanics have been working on a rig, be sure they have finished their work and all have left. Make sure they haven't left any tools or equipment behind either.

I know of a worker on a runway job, who ate his lunch in the shade of a large sheep's foot roller. Then he settled down to take a catnap before going back to work. In the meantime, the operator got on the tractor, backed it up, and ran the heavy roller over the man. Thirty seconds of precaution on the part of the operator would have prevented this accident.

Another time, a service operator drove up to a dragline and got off his truck to tell the operator about a gas can he had previously placed in the rig. In a few minutes, he got back on the truck and backed up. He ran over the crane oiler, who was behind the truck and facing away from it. This shows why it's always necessary to have someone signal for you when you're backing equipment or

trucks in places where people and equipment are working. We don't have many minor accidents involving heavy construction equipment. Most of them result in serious injury or death.

Admittedly, it takes a few seconds to walk around the machine or truck before you board it. And it takes a few seconds to have someone signal you when you back such equipment. But this time is well spent - especially if it saves someone's life. It also saves the many sleepless nights you would suffer if you were responsible for injuring or killing a fellow worker.

A Few Seconds Can Save a Life

If you operate heavy equipment, remember that those working around it are at your mercy. Before starting or backing the vehicle, take the few seconds it requires to be sure that no one is in danger. You owe it to those you work with.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

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Bucket Trucks



Special Jobs Need Special Equipment

Truck-mounted aerial lifts – commonly called “bucket trucks” – are a specialty tool for performing various types of elevated work. As with any tool, bucket trucks require special training to ensure proper use.

Key Points

1. As with all aerial lifts, there is an element of risk in working at heights.
 - a. Requirement for use of Personal Fall Arrest Systems (PFAS)
2. Pre-use inspections are required or the equipment may not be used.
 - a. Need for a uniform approach to inspections.
3. Weather conditions may present specific risks.
 - a. High winds.
 - i. Boom trucks may not be used in winds greater than 30 mph.
 - b. Lightning
 - i. If we can hear thunder, we can be struck by lightning.
4. The boom must be positioned over the rear (drive) axle in line with the direction of travel.
 - a. If the boom is over the front axle, the controls will be reversed.
5. When stationary, the boom truck’s outriggers (stabilizers) must be fully and properly deployed.
 - a. This provides a secure base of support when raising and extending the boom.
6. When the truck is moving, the bucket may not be occupied.
7. The operator must always face in the direction of movement of the boom and bucket.
8. Ensure there is adequate “swing radius” clearance; that is, where the counterweight rotates.
 - a. Employees can be struck and/or entrapped and crushed by the swing radius.

- b. High-visibility banners or similar equipment should be deployed.
- 9. The equipment is to be operated within the recommendations and restrictions of the manufacturer.
 - a. Never use a tool for other than intended purpose.
- 10. When employees are working on the same pole, they may not work simultaneously on equipment of different polarities.
- 11. Provide equipment inspection and dielectric testing at least annually or every 1,000 hours.
- 12. Training
 - a. Only trained, qualified operators may be permitted in the bucket and at the controls of the equipment.
 - b. Training must be provided by a qualified instructor.

Summary

Boom lifts are specialty equipment, and enable us to perform unique job tasks. Electrical work often requires elevated work, and must be performed with proper controls. These controls include thorough pre-operation inspection, proper placement and operation, use of Personal Fall Arrest Systems, and minimum annual equipment inspections and dielectric testing. Safe worker and safe equipment equals safe work. Let's all do our part to make it happen!

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Forklift Trucks



Forklift Trucks Are Great Tools for Materials Handling, but There's No Free Lunch!

To prevent strain and sprain injuries and to economize our efforts and energy, use of forklift trucks is a great idea.

Application: The Forklift Truck Policy applies to all jobsites and facilities.

- Construction Forklifts—typically, an extensible-type forklift—commonly “called rough terrain.”
- Common on construction sites; they have air-filled tires; forks and boom move multiple directions.
- Industrial Forklifts—typically, a straight mast lift truck that lifts up and down, but does not extend out. May have solid rubber tires or air-filled tires.
- Common in shops and warehouses for moving loads on and off storage racking and loading/off-loading delivery vehicles.

Key Points

1. Forklift truck requirements
 - a. Only trained, qualified operators may be permitted to operate a forklift truck of any type.
 - i. Training must include classroom, demonstration and skills evaluation.
 - b. Forklift trucks must be maintained in safe operating condition.
 - i. Any forklift truck with identified safety or operational defects must be taken out of service until restored to operating condition.
 - c. Pre-shift inspections of forklift trucks are required for any type vehicle.
2. The A through Z's of Forklift Operation.
 - a. Only trained, qualified operators at any time.
 - b. Operating only a safe, serviceable vehicle.
 - c. Full attention at all times.

- d. Seat belts properly fitted to the operator whenever operating.
 - e. Speed control according to conditions.
 - f. Slow down for intersections and doorways.
 - i. Use your horn when approaching intersections, doorways and people.
 - g. Never pass another forklift truck traveling in the same direction.
 - h. Familiarity with all controls.
 - i. Tilt the forks upward before traveling with a load.
 - j. Smooth, deliberate actions
 - k. Forks as low as feasible when driving, with or without a load on the forks.
 - l. Engage loads to the mast for secure transporting of loads.
 - m. Never lift with only one fork – loads must always be supported by both forks.
 - n. Engage/move only stable loads.
 - o. Transport materials only – never people.
 - i. Unless in an approved personnel lift.
 - p. Maintain clear line-of-sight, whether driving forward or backward.
 - q. Yield right-of-way to pedestrians ALWAYS!
 - r. Never overload the vehicle
 - s. Slow down for wet, slippery surfaces.
 - t. Do not follow behind another forklift closer than 3 truck lengths.
 - u. Forklift trucks are for lifting & transporting loads – never push objects with the forklift.
 - v. Do not block emergency exits or emergency equipment.
 - w. Never modifying the forklift without written approval from the manufacturer.
 - x. Forks down, power off, brake set when not operating the forklift truck.
 - y. All forklift incidents – injury, property or near-miss – must be immediately reported.
 - z. Either the wheels turn or the forks move – never at the same time.
3. Training
- a. Only trained, qualified operators may be permitted to operate a forklift truck of any type.
 - i. Training must be conducted by a certified instructor.
 - b. 3-phase training is required: classroom, demonstration, competency evaluation.
 - c. Re-training required after observed unsafe operation or after an incident.
 - d. Re-evaluation required at least every 3 years.

Summary

Forklift trucks make work easier and more efficient. We all have responsibility to ensure safe operation of powered industrial trucks. Whether operating or observing, let's all be a part of using these tools properly and safely.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Scissor Lifts



Raising Elevated Work to New Heights!

As much of our work is performed in elevated positions, it is important to ensure the safety of all workers – protecting them from falling while working effectively and efficiently. Scissor lifts make all of this possible, IF we use them properly.

Application: Scissor lifts are often used, and recommended, as a substitute for ladders or excessive reaching above our heads.

What is a Scissor Lift?

A scissor lift is a powered work platform equipped with standard guardrails to prevent workers from falling.

Key Points

1. Qualified operators
 - a. Only trained, qualified workers may be permitted to operate a scissor lift.
 - b. Training must be delivered by a Competent Person, as defined by OSHA Standard 29 CFR 1926.32(f).
 - c. Training must include a combination of classroom and skills training, to include evaluation of skills of the trainee.
 - d. Training is required for any and all workers on the lift, whether they are operating or assisting.
2. Inspection
 - a. Pre-shift inspections, by a trained operator, are required before scissor lifts may be used.
 - b. Inspection includes a visual check for defects (guardrail, housekeeping, tires) and warning labels and decals.

- i. Any safety or operational defects identified must be corrected before using the lift.
 - c. Inspection includes a function check before the lift is mounted for use.
 - i. If ground operations malfunction, the lift may not be used until defects are corrected.
 - d. Inspection includes a full function check after the lift passes the ground function test.
3. Operation
- a. The lift must be clear of obstructions at all times. Contact with a surrounding object or structure is not permitted at any time.
 - b. Guardrails must be fully functional, including at the access point.
 - i. Chains, bars, and swinging gates must be free of defects and properly deployed.
 - c. Workers' feet must remain on the deck (floor) at all times.
 - d. No devices may be used to elevate a worker above the deck (e.g., ladders, boxes, etc.).
 - e. Non-operating workers must remain at least 6 feet from the lift while in operation.
 - f. Lifts must be used on level, stable surfaces only, avoiding floor irregularities.
 - g. High speed is not permitted when the lift is elevated, and in confined, hazardous areas or where people or equipment is present.
 - h. The lift's load capacity is never to be exceeded – do NOT overload the lift!
 - i. The lift is not to be leaned or braced against a surrounding structure – it is to be free-standing.
 - j. Provide a minimum clearance of 2 feet from any floor opening or drop off.
 - k. Keep all materials within the toe boards of the lift, unless extension (e.g., conduit) of items does not create a hazard.
 - l. If a malfunction occurs with the lift, it is to be lowered to ensure the safety of all workers.
 - i. And removed from service until a Competent Person verifies safe operational condition.

Summary

Elevated work is often unavoidable in operations. The key to safe, effective elevated work is selecting the proper tool for the work. Given the choice of working from a ladder or a scissor lift, the lift is safer due to its guardrail system. Even this safety factor is not a guarantee of complete worker safety. Only through effective training and diligent, safe operation of the lift can we reliably perform elevated work with confidence and safety.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Material Handling



Lowering from Overhead



More Hazardous than Lifting

We talk a great deal about the proper way to lift things up. But we don't say enough about lifting them down – that is, lowering them from overhead. This can be dangerous. Recently a worker was tearing down a machine. He had to remove a flywheel from a shoulder-high shaft. The wheel didn't look heavy to him, but when it came free, it was more than he could handle. He fell to the floor with the flywheel on top of him and was seriously injured.

A Common Occurrence

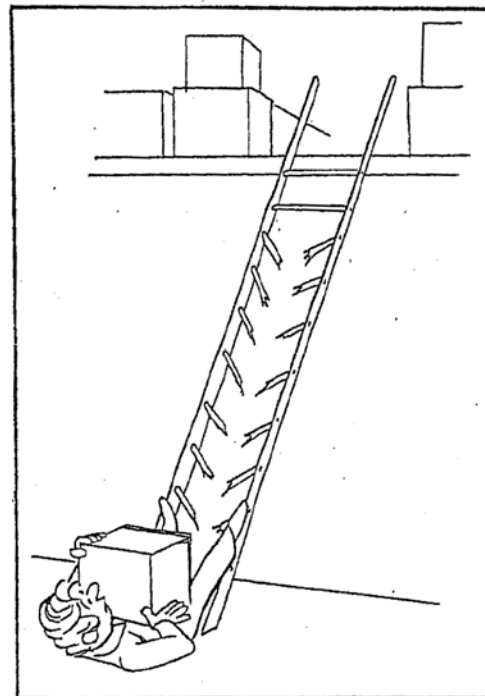
Getting into trouble when lowering heavy items is a common occurrence. You may have experienced trouble yourself. Perhaps you had to get a box of hardware from a high shelf. You had the box over your head and suddenly realized you couldn't handle it. It was coming down on top of you. You were afraid to hang on to it; afraid to let go. The box hit you as it slid from your grasp. The contents scattered all over the floor.

How to Approach Overhead Loads

1. **Size up the Load**—If it looks too heavy for you to have lifted it to where it is, it's probably too heavy for you to take down. Give yourself the benefit of the doubt. Once you get it loose, it's all yours. And if you can't handle it, it's too late.
2. **Ask Yourself: How Did It Get up There?**—Was it put there by a lift truck? By two men? By a real big guy; Atlas maybe? The way it got up there is probably the best way to get it down.

How to Lower a Load You Can Handle

When you're lowering something you can handle, set it down the same way you would lift it up. Keep knees bent and back straight. If you have to place it to one side or the other, don't twist your body. Move your feet instead.



What Goes up Will Come Down—Faster

If you're lifting something up, you can always stop if you find it's too heavy. But when lowering a load from overhead, you've already passed the point of no return the moment it breaks free.

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Suspended Loads



Lightning doesn't have to strike often to do a job on you. Just once usually is enough. And it's the same with overhead loads. If one falls on you, it generally makes a permanent impression. That's why we always should stay out from under cranes, booms, and buckets. This means concrete buckets as well as backhoe buckets. Your first accident may be your last.

Use Your Head

Use your head. Not to stop a falling object, but to make sure an object doesn't fall on you. Don't stand, walk, or work under crane booms, buckets, or suspended loads. And while using your head, keep it covered with a hard hat.

Plan Ahead

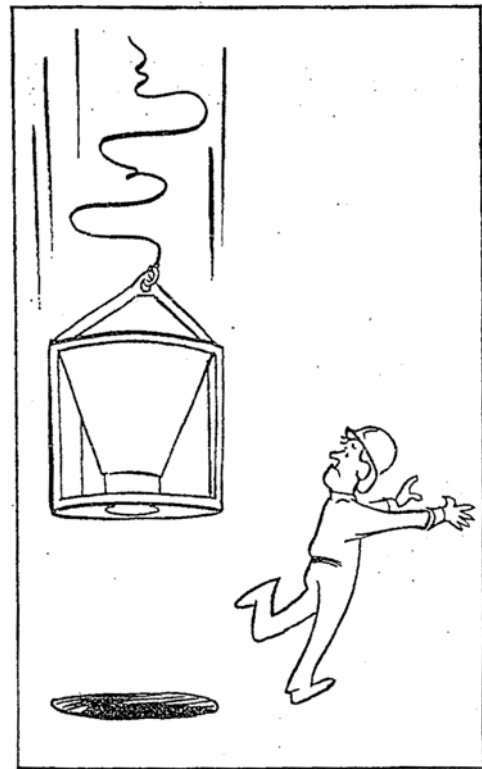
If you have anything to do with planning lifting operations, be sure the boom or bucket will not be swinging over workers. You may have to rope off or barricade the swing area, or schedule the lifting operations when the workers aren't in the vicinity.

Concreting Operations

Did you ever get hit in the head with a piece of semi-hardened concrete that dropped from a crane bucket? It hurt, didn't it; even though you were wearing your hard hat. How do I know you were wearing your hard hat? If you weren't, you wouldn't be here. Laborers have to be especially careful to keep clear of the crane when the operator is loading and hoisting the bucket.

Backhoes

So many times we think only in terms of crane booms, but the same thoughts apply to backhoe operations. A pipe crew gets so used to setting pipe with a backhoe that they get in under the load in a ditch. What is going to happen if



a cable breaks or a hydraulic line blows? Look at the mechanics of the boom. If a cable breaks, will the load shift horizontally as well as drop? Think!

Avoid Overhead Hazards

Remember: To avoid danger from crane booms, keep out from under them at all times. And wear your hard hat, just in case.

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Lifting



Do you realize you may be risking serious injury many times a day and not even know it? Well, it's true if you don't lift correctly. Improper lifting may cause back injuries that can take months and even years to heal. Sometimes they are permanent and disabling. A little know-how, however, can enable you to lift correctly.

Preparing to Lift

Give the load the once-over. If it looks too heavy, don't be afraid to ask for help.

Be sure you're wearing safety shoes. There is always the chance of dropping something on your toes. If the object has rough or sharp edges, wear a good, tough pair of work gloves. They'll give you a good grip and protect your hands.

Making the Lift

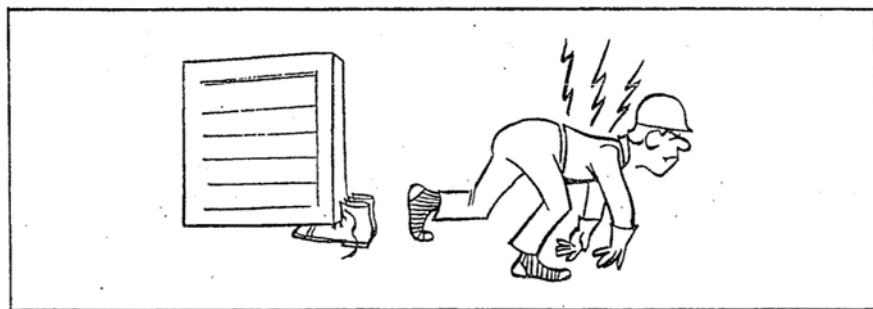
Crouch down with the load between your legs and get a good grip on the object. As you rise, lift with your legs, keeping your back vertical and the load as close to your body as possible. If you have to place the load to your left or to your right, don't twist your body. Move your feet instead. When you have to lower a load, simply reverse the knees bent, back vertical procedure.

Let's Review

Let's quickly review what we said about lifting:

1. Don't lift more than you can handle. Ask for help with heavy loads.
2. Wear safety shoes.
3. If the object is rough or sharp, wear gloves.
4. Lift with your legs and not your back.
5. Keep the load close to your body.
6. Don't twist your body when placing a load to one side or the other. Move your feet instead.

When it comes to lifting, don't break your back. Instead, lift right and give your back a break.



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Overhead Loads



A young construction worker was killed the same day his wife was coming home from the hospital with their first child. How did this occur? A heavy, bulky section was being transported by a crane, which had to carry it six or seven feet in the air to clear other objects. The load was equipped with taglines, which were being used to guide it by all of the workers except this young man. Although warned by his foreman to use the line, he didn't. A lifting pad gave way and he was killed instantly.

If It's in the Air, It's Dangerous

This incident reminds me of a slogan I once saw: "If it's in the air, it's dangerous." This is something to remember even if the mechanical equipment seems to be in good condition.

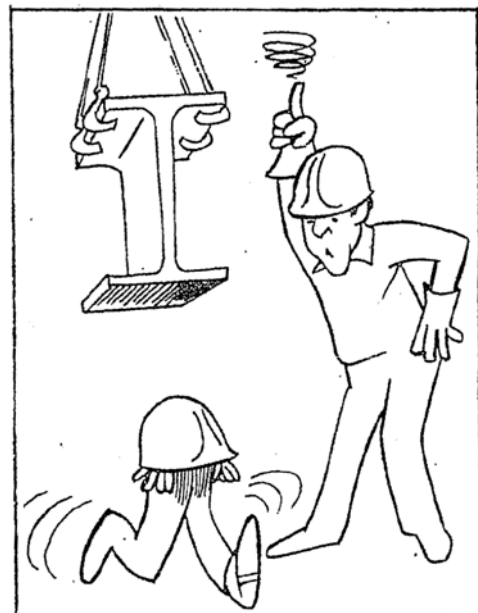
Let's Review

Let's review some of the rules that can help keep us from getting injured by falling loads:

A load that can be carried close to the ground can be stabilized by a person at each end. These individuals must stay in the clear at all times, and the ground surface must be unobstructed and reasonably level. Taglines should always be used where needed. And definitely where the load is to be carried more than five feet above the ground. In some cases, ten-foot taglines should be used to guide loads being raised and lowered, rather than using extremely long lines that drag around the jobsite and can snag on something.

On all jobs, only one person, generally the lead person, should give signals to the crane operator. If you are assigned the job of directing the crane, follow these basic rules:

1. Stand in the clear and place yourself where the operator can plainly see you and you can see the operator.
2. If you can't see the load and another person is signaling to you, be sure everyone is in the clear before you give the signal to the operator. Remember, it takes time to relay signals.



3. Never permit a load to be lowered, raised, or swung over a worker's head. If the operator can see the load, it's the operator's responsibility—without exception—to see that this rule is followed.

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Project Number/Name:	Meeting Location:	Person Conducting Meeting:

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Rigging



Rigging looks like an easy operation, one that doesn't seem to require any particular skill or experience. But don't be fooled. Many people who've thought that "anyone can do it" have lost fingers or hands, or suffered more serious injuries.

We don't want anyone injured while rigging on this job. So I'm going to point out some of the "do's and don'ts." Pay close attention.

Get Your Signals Straight

Appoint one member of the crew to act as signalman, and instruct the crane operator not to accept signals from anyone else.

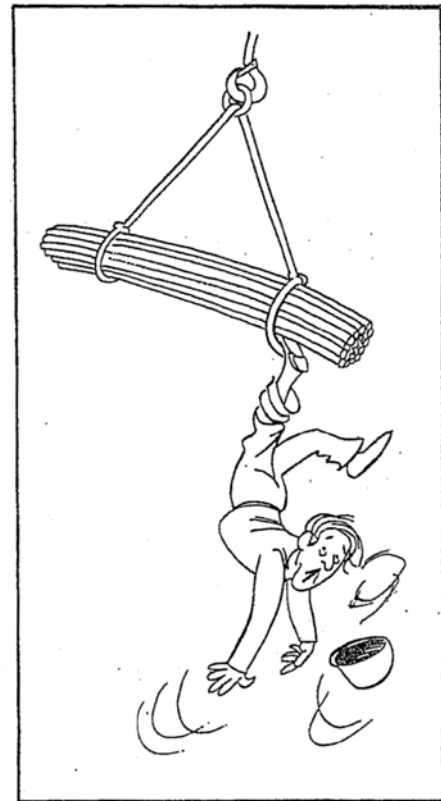
The signalman must not order a move until getting an "all ready" from each crew member. Each worker, in turn, must be in the clear before giving an "all ready" to the signalman. If you must hold on to the chain, sling, choker, or whatever to maintain tension, be sure your hands and feet are out of the way of pinch points before giving an "all ready."

Protect Your Hands

If it isn't possible to release the chain, sling, or choker, be sure your hand is clear of pinch points. In fact, keep your hand far enough away so that a frayed wire or splinter on the chain can't catch your glove and jerk your hand into a pinch point.

Watch Out for Rock and Roll

It's almost impossible to position the hook exactly over the load center. So, watch out for a swing or roll. Anticipate the direction of the swing or roll and work away from it. Never place yourself between material, equipment or other stationary objects and the load. Stay away from stacked material that may be knocked over by a swinging load.



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Handling Gas Cylinders



How many of you realize how dangerous gas cylinders can be? Let me give you an example.

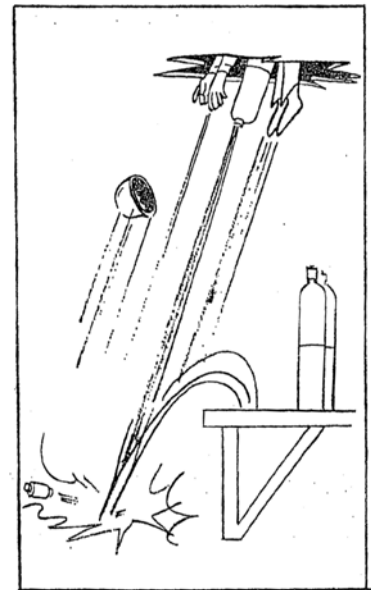
A workman was unloading cylinders from a delivery truck. On one cylinder the valve was not protected by a cover. The workman rolled this cylinder to the hydraulic tailgate lift. Just as he stepped onto the tailgate, the cylinder slipped from his grasp and fell. The valve struck the ground and broke off. The full cylinder shot up like a rocket and smashed the workman's face as it headed for the wild blue yonder. The cylinder was found a quarter of a mile away from the job! The workman died a few hours later in a hospital. Cylinders have been known to plow through brick walls.

Before Moving Cylinders

Check the protective valve cover. The cap should be in place and secure. Never use this cover to lift the cylinder.

Be sure the valve is closed. (Also, be sure the valves are closed when work is finished or cylinders are empty.)

Never move cylinders when regulators are attached unless the cylinders are secured in a cylinder truck. Otherwise, remove the regulator and put on a protective valve cap. Regulators have a nasty habit of breaking off if they are bumped hard. If cylinders are frozen together during cold weather, the safest way to thaw them loose without damaging them is to use warm (not boiling) water. Never use pry bars for this job.



When Moving Cylinders

Move cylinders by slightly tilting them, then rolling them on the bottom edges. Take care not to let them drop or strike other cylinders or objects.

Never use chokers slings or magnets to hoist cylinders, since the chance of the cylinder falling is great. Hoist cylinders by using a cradle or pallet, making sure the cylinders are secure before the hoist.

The workman we mentioned earlier probably didn't have a firm grip on the cylinder when it slipped. Perhaps his hands or gloves were greasy or oily. This mistake cost him his life. Don't you make the same mistake. Keep a firm grip on cylinders all of the time.

Protecting Cylinders

If cylinders are close to welding or cutting operations, place a fire resistant shield between the cylinders and these operations. In that way sparks, hot slag or flames won't be able to reach them.

To keep standing cylinders from being knocked over, chain or tie them to a column or to something else that's secure. This goes for both full and empty cylinders. Even an empty cylinder can cause a lot of damage if it falls on you.

Take the same precautions when handling empty cylinders that you would with full ones. The reason? A cylinder you may think is empty could be full. And the excuse "I didn't know it was loaded" is a poor one.

When using different types of gas, segregate cylinders containing one kind of gas from another.

Don't Let Cylinder Accidents Skyrocket

When handled or stored incorrectly, a cylinder can go up like a rocket. And, as we have seen, it not only can cause property damage, but death. Use common sense and good judgement, and keep cylinder accidents down.

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Project Number/Name:	Meeting Location:	Person Conducting Meeting:

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Comments: _____



Ergonomics



How to Prevent Musculoskeletal Disorders

There is a kind of injury you could suffer while at work that you may have never even considered. You know how to avoid head injuries, falls, cut fingers or crushed feet. We talk about these potential injuries all the time. But there is another kind of injury you could develop that we haven't said much about. They are called musculoskeletal disorders, repetitive strain injuries or ergonomic injuries, and they are more common than you think.

Application: Be sure you know the signs. It is important that you know whether you might be developing one of these injuries. If you don't report signs or symptoms early, permanent disability can result. You can avoid long-lasting problems if you let us know early enough. There are a variety of signs of ergonomic injury. Workers who suffer from these conditions may experience less strength for gripping, less range of motion, loss of muscle function and an inability to perform everyday tasks. If you have any of these signs, report them immediately. Even if you haven't experienced these signs, you could still have symptoms that indicate a possible ergonomic injury. Such symptoms include:

- Painful joints.
- Pain, tingling or numbness in hands or feet.
- Shooting or stabbing pains in arms or legs.
- Swelling or inflammation.
- Burning Sensation.
- Pain in wrists, shoulders, forearms or knees.
- Fingers or toes turning white.
- Back or neck pain.
- Stiffness.

Summary

Musculoskeletal disorders are injuries or illnesses that affect muscles, nerves, tendons, ligaments, joints or spinal discs. They occur when there is a poor fit between a job and the person doing the job. The kinds of jobs that are most likely to cause a work-related musculoskeletal disorder are those involving reaching, bending, heavy lifting, using continuous force, vibrating equipment and repetitive motions. Carpal tunnel syndrome, trigger finger, tendonitis, rotator cuff syndrome, sciatica, Raynaud's syndrome, De Quervain's

syndrome and Hand-Arm Vibration Syndrome are just a few of the names for these injuries. There are risk factors that can increase your likelihood of developing one. When you perform the same motions over and over again, the repetition places stress on the muscles and tendons. The severity of the risk depends upon how often you repeat the action, the speed of the movement, the number of muscles involved and the required force. Another risk factor is forceful exertion. Force is the amount of physical effort required to perform a task or to maintain control of equipment or tools. The type of force depends upon the type of grip, the weight of an object, body posture, the type of activity and the duration of the task. An awkward posture is another risk factor and it occurs when your posture affects the muscle groups that are involved in physical activity. Repeated or prolonged reaching, twisting, bending, kneeling, squatting, working overhead with your arms or hands or holding fixed positions are all awkward postures. Contact stress, such as pressing your body against a hard or sharp edge, and operating tools that vibrate can all lead to ergonomic injuries. If you think you might have one of these injuries, please let us know right away. By working together we can rid our workplace of these hazards and avoid all musculoskeletal disorders.

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Material Handling



What Should Your Employees Know before Moving, Handling, and Storing Materials?

The efficient handling and storing of materials are vital to industry. Unfortunately, the improper handling and storing of materials often result in costly injuries.

To prevent injury from oversize or unstable loads, workers should seek help:

- When a load is so bulky that you cannot properly grasp or lift it
- When you cannot see around or over a load
- When you cannot safely handle a load

Using personal protective equipment prevents needless injuries when manually moving materials:

- Hand and forearm protection, such as gloves, for loads with sharp or rough edges
- Eye protection
- Steel-toed safety shoes or boots

Lifting Doesn't Have to Be a Dangerous Proposition

There are two common mistakes made in lifting.

1. The first is using the back muscles, instead of the leg and buttock muscles.
2. The second is lifting an object too far from the body.

Let's look at some do's and don'ts.

Don'ts

- Don't lift things when your feet are too close together. If your feet are closer than shoulder width you'll have poor leverage, you'll be unstable, and you'll have a tendency to round your back.
- Don't lift with your knees and hips straight and your lower back rounded (bending over). This is the most common and stressful bad lifting move. Twisting the trunk during this bad move compounds the problem.

- Don't tense and arch the neck when lifting. This crams your neck joints together and causes pain especially if maintained for a long period of time.
- Don't lift and/or carry an unbalanced load.
- Don't lift and bend too much in a short period of time.
- Don't lift objects that are too heavy for you.
- Don't lift heavy objects directly following a sustained period of sitting, especially if you have been slouching.
- Don't lift things overhead with your neck and back arched, if possible.

Do's

- Do place your feet and knees at least shoulder width apart or front to back in a wide-step position.
- Do lean over or squat with the chest and buttocks sticking out. If you do this correctly, your back will be flat and your neck will be balanced in a relaxed neutral position.
- Do balance your load on either side if possible, or switch sides so that both sides are equally stressed.
- Do level the pelvis or tuck in your buttocks and suck in your abdomen, when reaching or lifting overhead. Keep your chest up and use a step stool to keep the low back and neck in neutral alignment.
- Do walk around and use backward-bending and/or stomach-lying positions before or after bending or heavy lifting, especially if you've been sitting for a while.

Stored materials must not create a hazard for employees. Employers should make workers aware of such factors as the materials' height and weight, how accessible the stored materials are to the user, and the condition of the containers where the materials are being stored. To prevent creating hazards when storing materials, employers must do the following:

1. Keep storage areas free from accumulated materials that cause tripping, slipping or that may contribute to the harboring of rats and other pests
2. Place stored materials inside buildings at least 6 feet from hoist ways, or inside floor openings and at least 3 feet away from exterior walls
3. Separate non-compatible material
4. Stack lumber no more than 10 feet high if it is handled manually, and no more than 20 feet if using a forklift
 - a. Stack and level material on solidly supported bracing
 - b. Ensure that stacks are stable and self-supporting
5. Do not store pipes and bars in racks that face main aisles to avoid creating a hazard to passersby when removing supplies

During materials stacking activities, workers must also do the following:

1. Storing material inside a building no closer than 18 inches to the walls, partitions, or sprinkler heads
2. Band boxed materials or secure them with cross-ties or shrink plastic fiber
3. Stack and block poles as well as structural steel, bar stock, and other cylindrical materials to prevent spreading or tilting unless they are in racks

4. Observe height limitations when stacking materials
5. Consider the need for availability of the material

Summary

As in life in general, moderation and balance are important considerations in care and maintenance of your back. You need the correct proportions of strength, flexibility, and overall quality of life to eliminate or minimize back injuries. You need to exercise, eat right, and stretch as often as possible to help prevent injuries, and to recover more quickly if injured. In addition, a reduction in stress levels can help to relieve the muscle tension that can contribute to injuries.

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Preventing Back Injuries



Learn to Prevent a Back Injury

One fourth of all work related injuries result from materials handling. Whether lifting materials is part of your job or not, sooner or later you're going to lift something. If you're going to do it; you should know how to do it right. Do your Stretch and Flex exercises every morning, then flex and stretch your muscles just before picking up a load.

Carrying the Load

First, look at what you are lifting. Be aware of any sharp edges, slivers, or protruding nails. Find out how heavy it is. If the load is too heavy or bulky, get help. Long objects, regardless of weight, should be carried by at least 2 people. Check your footing, be sure the ground in the area is dry and clear of obstructions.

Then, when carrying a load, watch where you are going. Don't skin your knuckles on doorways and in other tight places. Don't try to change the position of a load when you are carrying it. Set it down or rest it against something before you re-adjust your grip. Set it down the same way you picked it up – by bending your knees, with your back straight. Put down one corner of the load first and then slide your hands away from it. You wouldn't want to get your finger caught under something heavy or sharp.

Proper Method for Lifting

In spite of the increased use of machinery and equipment in construction work, most materials put into a structure are moved by hand during some phase of the building. If caution is not observed, severe back injuries and hernias could occur. Each worker should know the proper method of lifting heavy objects. Here's a little review of what you should already know:

- Maintain secure and solid footing
- Wear gloves when handling rough equipment or material
- Place your feet about shoulder width apart
- Bend at the knees to grasp the weight
- Keep the load close to your body

- Keep your back straight
- Don't twist your body while lifting or carrying a load
- Get a firm hold on the object
- Lift gradually by straightening the legs
- Get help when the object is too heavy or bulky for you to lift comfortably
- Reverse the procedure when putting the load down
- See that your fingers and toes are clear of any hazards

A Further Word of Caution

When you "bend your knees" do not bend them so far that you are sitting on your heels. Sitting in a squat, you won't have enough leverage to raise a load from that position. You should be in a crouch at the start of the lift, so the power of your leg muscles can be utilized to the best advantage. When you are keeping your back straight, do not make it too rigid. You want to keep it reasonably straight so your back muscles won't be doing all of the work. Back muscles that are too tense are easily injured.

Finally, don't try to lift or carry a load that is beyond your ability! Get someone to help.

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Medical



Serious Injuries



Serious Injuries

At our safety meetings we stress accident prevention. And we try to follow through on the job. But accidents sometimes occur despite all of our efforts.

Helping a Victim May Do More Harm than Good

We all are inclined to lend a helping hand when we see a fellow worker injured and suffering. We want to ease the pain and do whatever else we can to aid in the emergency. And this is to our credit. But in some cases, we can do more harm than good. Often it's better to let an injured person alone until professional or trained help arrives.

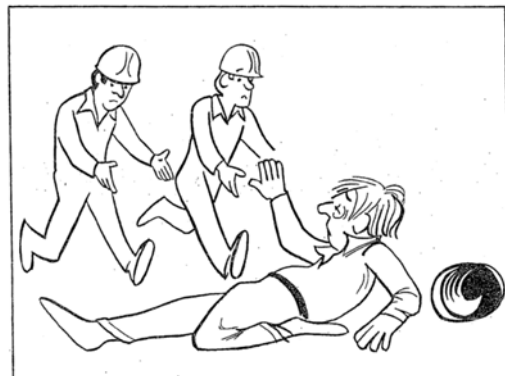
Trained First-Aiders Often Close at Hand

Many persons have taken Red Cross first-aid training courses, and one of them is usually close at hand. If so, follow that person's directions. Maybe some of you have taken a first-aid course. If so, let me know, so that we can call on you for assistance in case of emergency.

Remember This Important Rule

For those of you who have had no training in first aid, remember this rule: "Do not move an injured person nor try to get that person to stand."

I recall a case in which a laborer suffered a crushed hip. Fellow workers helped him to stand and tried to make him walk. This resulted in intestinal damage, which killed him. In another case, a simple fracture turned into a compound fracture because witnesses persuaded the injured man to get to his feet.



Get Help

A good rule to follow when there's an injury is that unless you know what to do, get help. This applies in all cases of serious falls, collisions, crushing injuries, and severe blows by heavy objects or vehicles. Always consider the possibility of injury, even when there's no outward evidence.

Curb your natural tendency to try to get injured persons on their feet. Make the victim as comfortable as you can with the least possible movement. Then let that person alone until trained help arrives. Persuade the victim to stay down and not get up.

In Case of Bleeding

In case of bleeding you can help by doing something to stop the flow of blood.

The best way to stop bleeding is to press a clean handkerchief or cloth tightly over the bleeding area. Even your hand is OK if you have nothing else to use. Pressure causes the flow of blood to slow down or stop and allows clotting to take place.

In some instances of severe bleeding, or in those cases where the blood can't be controlled by pressure alone, a tourniquet may be necessary to control excessive blood loss adequately. An improperly used tourniquet, however, may cause permanent injury or lead to amputation.

First-Aid Courses Available

If any of you are interested in learning first aid, the Red Cross will be happy to have you attend its classes. You can find out where these classes are conducted by calling the local Red Cross office. First-aid courses also are provided by the U.S. Bureau of Mines.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Comments: _____



Heat Exhaustion and Sunstroke



When working during hot weather, we may suffer heat exhaustion or sunstroke. Heat exhaustion is caused by the loss of body salt, and sunstroke occurs when the body mechanism is not able to keep the system cool. Following are the symptoms of these ailments and the steps we should take to aid the victim.

Heat Exhaustion—Symptoms

The first signs of heat exhaustion are dizziness, weakness, headache, blurred vision, nausea and staggering. The face becomes pale, there is profuse sweating, the pulse is weak, and breathing is shallow. The person may become unconscious.

Treatment

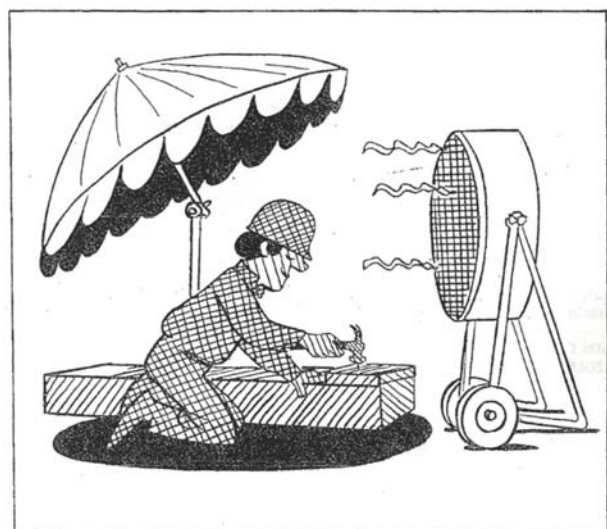
When someone shows symptoms of heat exhaustion, immediately remove that person to a place where the air is circulating freely. Make the person lie down and keep him or her warm. If the victim is conscious, add a teaspoon of salt to a pint of cool water and give this to the victim in small sips at frequent intervals. If the heat exhaustion symptoms persist, call the doctor.

How to Avoid

Keep in good physical condition and stop to rest when you begin to feel faint. Increase dietary salt and fluids when working in extremely hot weather.

Sunstroke (Heatstroke)—Symptoms

The victim develops a severe headache, the face is red, the skin is hot and dry, there is no sweating and the pulse is strong and very rapid. The person has a high fever (105 – 106 F.) and may become unconscious. This is followed by convulsions, coma, and sometimes death.



Treatment

Get the victim to where there's professional medical treatment as soon as possible. In the meantime place the individual in the shade. Loosen the clothing and cool the victim with the best means available. If the individual's temperature starts to drop, cover with a light blanket, so that the sudden change in body temperature won't cause shivering or convulsions.

How to Avoid

Stay away from alcoholic beverages. Instead, drink water, lemonade, or citrus fruit juices. Wear clothing that is lightweight, well ventilated, and loose. Replace the body salts lost through perspiration by making sure your salt and fluid intake is adequate, when you begin to feel faint. Increase dietary salt and fluids when working in extremely hot weather.

Know the Difference

Become familiar with the symptoms of sunstroke and heat exhaustion: As we've discussed, the treatment for each of these ailments is different. And knowing the difference could mean life or death.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

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Minor Injuries



When we talk of someone being injured, we usually think of serious injuries, such as those involving broken bones or where a lot of blood is lost. We don't think much about the little incidents, such as scratches, splinters, dust in the eye, and blisters. These things don't give us much pain nor lay us up. And if properly treated, minor injuries shouldn't give us serious concern.

Even Minor Injuries Can Become Serious

When we neglect a minor injury, however, we could end up in the hospital or even six feet under. Do you think that I'm exaggerating? Consider what can happen if you let a minor cut on your arm go untreated. Germs can enter and cause infection. It can cause blood poisoning, which can be fatal.

Two Kinds of Injuries Often Neglected

A hard blow on the head. This can make you dizzy or unconscious for a few seconds. It's easy to overlook this injury because afterwards you may feel OK, except for a headache.

What many of us don't realize is that a blow on the head can cause a slight concussion or fracture, which can't be detected except by a doctor. As a result we later may go to sleep and not wake up. So if you have a head injury see a doctor for a checkup.

A blow to the stomach. This can occur when you run into something or are struck by something. The blow may knock you down and take the wind out of you, but a few minutes later you may feel OK. Just because there may be no visible injury, however, is no reason for not reporting to first aid. It doesn't take much of a blow to rupture an intestine or start internal bleeding. And these unseen injuries can kill you.



Report All Injuries

The important thing to remember is to report all injuries, even though they are minor and no physical damage is apparent. Get proper first aid and see a doctor if necessary.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

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Biohazards / Blood Borne Pathogens



Blood Borne Pathogens in the Workplace!

All employees must be informed of and protected from biohazards that may exist in the workplace. The occupational exposure to infectious diseases such as Hepatitis B or HIV infections or other communicable blood borne pathogens may be minimized to the fullest extent possible. Therefore, employees may receive blood borne pathogens training to recognize the hazards associated with biohazards.

Application: Biological hazards potentially present on every job site must be identified. Biohazards may be characterized as dangerous plants, dangerous insects or dangerous animals or a pathogen. A blood borne pathogen is one that is found in blood.

Biohazard Controls

1. Person involved in clean-up of contaminated areas where blood borne pathogens exist should have a baseline serum sample drawn and stored.
2. Any persons involved in biohazard clean-up should protect their skin by wearing protective clothing and may require a face mask containing a HEPA filter.
3. During clean-up, any potentially contaminated items should be sprayed with disinfectant prior to disposal. Dust should be kept to a minimum.
4. Any employee who becomes ill within 45 days after clean-up shall report it to the Field Manager to seek medical attention.
5. Anyone who is bitten by any animal must report the incident to the Field Manager.
6. Dangerous insect bites or stings should be reported to the Field Manager.
7. Report all allergic reactions from insect bites to the Field Manager to seek immediate medical attention.

8. Any bite by a reptile including snakes must be reported to the Field Manager immediately. Any employee reporting a snake bite must seek medical treatment ASAP.
9. Persons considered at risk from a blood borne pathogen exposure may be offered a test for HIV antibody to Hepatitis B surface antigen using an accredited laboratory.
10. Employees must wash their hands immediately or as soon as possible after removal of gloves or personal protective equipment and after hand contact with blood or other potentially infectious materials.

Report All Incidents

All incidents of exposure must be reported to the Field Manager to take the proper measures to treat the employee. The Field Manager should immediately report the incident.

Summary

Employees must be trained by a competent person about the biohazards they may encounter on a job. Before starting a job, review the site for possible hazards employees may be exposed to. Inform employees about such biohazards. Encourage employees to report all incidents involving exposure to all biohazards—insect bites, snake bites, bee stings, exposure to blood borne pathogens, etc.—so that if medical care is needed, the employee may receive the proper treatment. Record the incident in the event an illness may develop later.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

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Substance Abuse



Substance Abuse Costs More than Money

Look around you, 20% of the employees that you work with every day are likely using some type of illegal drug. According to the National Institute on Drug Abuse, one out of every five employees in the United States uses drugs on the job. Those are some scary numbers. Drug abuse can lead to terrible accidents and can cost us a fortune in things like absenteeism, sick leave, insurance claims, tardiness, and of course worker's compensation claims.

- Workers who use drugs tend to be absent 16 times more often
- OSHA estimates that 65% of all industrial accidents are the result of substance abuse
- Drug users are 3.5 times more likely to injure their co-workers in work related accidents.

What about Company Policy?

It is a serious problem, and one that we cannot tolerate. That's why many companies have a specific Substance Abuse Policy.

- The use of illegal drugs or alcohol is not permitted on any job site.
- Anyone caught using illegal drugs or alcohol on any job site is subject to immediate termination.

Many company policies prohibit the use of alcohol or drugs at any time you are acting as an employee for this company. This includes break times, lunch breaks and working hours. Another aspect of the policy is that employees are not allowed to come to work in an impaired condition. Doing so creates a hazardous situation for the impaired individual and also for his or her co-workers.

How to Ensure Compliance

Because this is considered to be of the utmost importance in providing a safe working environment, companies have implemented the following methods of ensuring compliance with the policy.

- Pre-employment drug testing
- Post-accident drug testing
- Random drug testing at some locations

- Pre-job drug testing for some job sites
- Drug testing for cause

Conclusion

The statistics prove that substance abuse is a serious work issue. Only through cooperation can we make sure that drugs do not lead to a tragic accident here. Everyone must adhere to the substance abuse policy for it to be effective. One weak link in the chain can cause disaster for everyone. Please make sure that you understand the policy and comply with it. If you don't understand the policy, or cannot comply with it, talk to your supervisor immediately.

Date:	Company Name:	
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Personal Protective Equipment



Personal Protection Equipment and Clothing



Keep It in Good Condition

I'm not going to preach about wearing protective equipment and clothing. You wouldn't work without it, any more than a baseball catcher would dream of going into a game without his glove, mask, and body protector.

But I am going to talk to you about making sure your equipment is in good shape. So that you won't have a false sense of security, like a non-swimmer floating off into deep water on a leaking inner tube.

It's Usually Safety Tested, but...

Reliable manufacturers test their safety equipment before they sell it. And, it usually exceeds the required standards. But if you alter the equipment or don't replace it when it's worn, you're figuratively heading into deep water with a dangerous leak.

To give you an example: Hard hats were supplied to a crew doing some clearing. One of them admired the strong nylon lace in the cradle of his hard hat and removed it to make a fancy key chain. He replaced the nylon with a piece of cotton string. A dead limb fell off a tree and struck his hard hat. The cotton string broke, the cradle collapsed, and his skull took the full force of the blow. He was killed instantly.

Is Your Equipment Worn or Torn?

The dangers of altered or worn equipment not only apply to hard hats but to other items as well. Take gloves, for example. Do they offer as much protection when they're torn or coming apart as they do when they're in good condition? The answer obviously is "No."

Or what about shoes? A pointed, sharp object can easily pierce or cut through a worn sole.



Even a small pebble can cause a nasty bruise. In addition to strong soles, shoes should have hard toes and good uppers. Safety shoes with steel toes give the best protection. And don't let laces that are too long trip you up. Either cut them off or tuck the excess length in your boots.

Cuffs, Loose Clothing and Jewelry

Beware of cuffs and loose clothing. They can get snagged on something or caught in machinery. Don't wear overalls or pants with cuffed or rolled up legs. If legs are too long, have them cut off and hemmed. Watch out for loose shirt sleeves and flapping shirt tails. Keep jackets buttoned or zippered shut at least chest-high. Watch out for jewelry. It can catch on things, too. Don't wear loose watch chains or straps looping from a button hole to a bib pocket. Keep rings, wrist watches or other jewelry in your pocket or in some other safe place. You've probably heard about rings getting caught on things and tearing off fingers.

Is Your Protective Equipment "Working"?

So remember. You not only have to wear protective equipment, but you have to be sure you're wearing it properly and that it's in good condition. Like the ad for the deodorant says: "Make sure it's working."

Date:	Company Name:	
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Eye Protection



An Eye for an Eye

A carpenter asked his insurance company to pay for damage to his glass eye. It had been broken when a nail he was driving flew up and struck it. When asked how he had lost his own eye in the first place, he replied: "The same way, a nail hit it."

A world of darkness awaits this man if a nail strikes, his remaining good eye. He has yet to appreciate the need for eye protection. You, yourself, may find it difficult to get accustomed to wearing eye protection, but would getting accustomed to wearing a glass eye be any easier?

A Sight Saver for Years

Eye protection has been used in the construction industry since 1910. And, undoubtedly, many workers have escaped serious eye injury because of it. You may personally know some fortunate individuals who saved their sight this way.

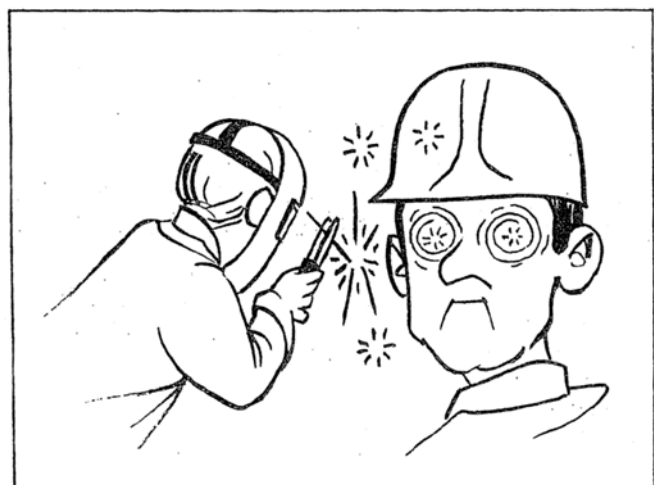
Take Time to Select the Right Kind

Depending on your job, you may need goggles, an eye shield, a face mask or safety glasses. All it takes on your part is a little effort to select the appropriate type and to wear it.

Four Basic Types of Hazards

Basically, there are four types of particles that cause eye injuries on the job.

1. Unidentified Flying Objects: These microscopic objects consist of dust and particles floating around in the air, generated by wind, equipment, or cleaning operations. When working in dusty conditions, wear eye protection. Even a small speck in the eye can lead to trouble.
2. Particles Resulting from Chipping, Grinding, Saws, Brushing, Hammering or Using Power



Tools: These particles move at an amazing speed and strike with the force of a bullet. Wear eye protection any time overhead operations are performed. It may be advisable on some jobs to wear safety goggles under a full face shield.

3. Invisible Hazards: You can't see the injurious light rays generated by welding operations or laser beams. And their effects often are not felt until hours later. Wear the eye protection required when using such equipment. And if you happen to be working nearby, don't look in the direction of welding arcs or where a laser beam is being used.

4. Liquids: Hot liquids, such as tar or asphalt, solvents, paint, and solutions for cleaning masonry or metal, can cause serious eye injury if splashed in your face. The use of proper eye protection, possibly a full face shield, is essential when transferring liquids between containers and when using caustic or acid cleaners.

Instant Darkness

Eye injuries happen in a split second. So put on your eye protection as soon as you get back to your job after this meeting. Don't blind yourself to the necessity of protecting your sight.

Date:	Company Name:	
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Comments: _____



Hard Hats



As Mighty Casey walked to the plate, he was sure he'd bang one out of the park for a home run. But, he struck out and his team lost. His past performance had given him a false sense of security.

No Room for Caseys on Construction Jobs

I see a lot of “Caseys” on construction jobs, walking around without hard hats. And sooner or later, they’re going to be struck out—literally. Some of them think nothing can happen to them because they haven’t been hurt so far. But they never know when a piece of concrete, a small rock, or a tool is going to fall ten stories and land on their head. As a matter of fact, there are very few occasions on a construction job when a hard hat should not be worn.

Hard Hats Serve Several Purposes

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

How to Care for Hard Hats

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

1. Properly adjust suspension systems to maintain clearance between your head and the shell of the hat.
2. Don't cut holes for ventilation. Don't heat and bend.
3. Don't substitute a “bump cap.” They aren't strong enough.



4. Don't paint your hard hat.
5. Don't put anything under it except your head; this includes cigarettes, notebooks, and such.
6. Don't wear it backwards.

Some Common Complaints and the Real Truth

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

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

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

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

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

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

No Help unless You Wear It

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

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

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Comments: _____



The Right Boot for the Job



To some people, one type of boot is the same as another. In construction, you've got to have the right boot for the job.

Steel-Toed Boots for Most Work

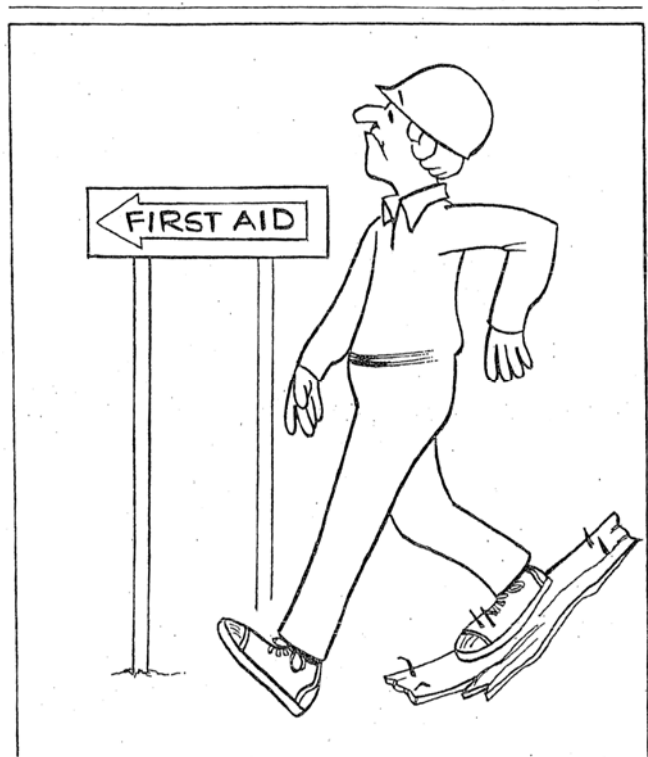
Steel-toed boots should be worn for most work. They not only protect your feet, but keep them dry. Your boots should have good soles to resist punctures or cuts from pointed or sharp objects. Safety insoles can be worn as an extra precaution against nail punctures. Laces that are too long could trip you up. Either cut them off or tuck the excess length in the top of your boots.

No Use unless You Wear Them

Probably everyone who wears safety boots can tell you of more than once when their boots prevented a serious injury. One important thing to remember, though: Safety boots will only protect you when you wear them.

Working in Water

Hip, hip, hooray! That's how many persons who work in water over a foot deep feel about hip boots. They keep their feet dry. It's also the way many persons pouring concrete feel about overshoes. They not only keep the concrete out, but they're comfortable. Overshoes have buckles that hold them tight to the ankle for more support, and there's nothing flopping or hanging from the top. Of course, if you get into concrete over a foot deep, you'll have the unpleasant experience of feeling the concrete seep into the boots and between your toes. You also may experience skin irritation or infection, which concrete can cause.



A form of protection worn in muddy areas is the over-the-shoe boot. Called the engineer's boot by some, it isn't as snug as the overshoe and has a tendency to bend or flop as you walk along.

Take Care if You Share

There's always a danger in sharing protective footwear, like hip boots, with someone else. If that person has a foot infection, you'll soon inherit it.

Date:	Company Name:	
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Personal Protective Equipment II



It Can Save Your Life

Prior to starting work, each work location and each work task will be assessed to determine if hazards are present, or likely to be present, that could be capable of causing harm to Employees. This policy should apply to all employees performing service work, working on construction sites, warehouses, prefab shops and manufacturing facilities.

1. All Personal Protective Equipment (PPE) will be provided by your company at no cost to the employee with the exceptions of work boots, prescription eyewear and volt meters.
2. All Employees:
 - Must wear an approved hard-hat, safety glasses and gloves.
 - Must wear safety toe leather work boots that meet ANSI Z41 standards. Must report for work wearing clothes that are in good repair and appropriate for the task assigned. Shirts shall have at least two-inch sleeves at a minimum. Frayed clothing or clothes with holes will not be allowed on site. Baggy pants are not allowed.
 - Jewelry is prohibited in work areas.
 - Must use required Personal Protective Equipment (PPE).
 - Must be provided appropriate protection against falls of 6 feet or more.
 - Must wear gloves when handling rough or sharp-edged or abrasive materials or exposed to conditions that could expose employee to potential laceration hazards.
3. Every employee is required to have a voltage tester and it is to be on their person when working on or around potentially energized electrical circuits, parts or equipment and when the main service has been energized until the completion of the project.

Inspection and Storage

Employees are required to inspect all Personal Protective Equipment (PPE) prior to use. When inspecting the Personal Protective Equipment (PPE) look for:

- Damage
- Cuts, cracks and/or abrasions

- Scratches in the surface
- Weathered components
- Hardening or stiffening of pliable surfaces
- Rips or tear spots
- Deterioration due to age, chemical contact and/or heat exposure

Head Protection

All Employees must wear approved head protection in any work area.

Eye and Face Protection

Employees must wear approved eye protection while on a job-site or in a work area.

Foot Protection

Employees must wear the required footwear as specified in your company's PPE safety program.

All footwear, except rubber boots, shall be made of leather and have a defined heel. The defined heel must be an original design by the manufacturer. The boots will extend over the ankle with a designed heel and a shank. If boots are the lace up type they will be fully laced at all times (tennis type shoes are not allowed).

Hand/Arm Protection

Employees are required to use appropriate hand protection when hands are exposed to identified hazards such as: Cuts, working around metal studs, installing fluorescent light fixtures, pulling wire, handling materials and whenever hands are exposed to potential abrasions and punctures; Thermal burns and harmful temperature extremes; Chemical burns, irritation or exposure to harmful substances.

Respiratory Protection

If you find yourself in a situation where a respirator is required, notify the Safety Manager before purchasing or issuing such Personal Protective Equipment (PPE). This includes filtering face piece (dust masks). Necessary medical testing must be performed prior to wearing a respirator.

Hearing Protection

Your company may make a variety of hearing protection available to the employees. Employees may wear only hearing protection approved by the Safety Manager. Approved hearing protection will include:

- Earplugs
- Headband plugs
- Earmuffs

Summary

Your company has selected the approved PPE that all employees are required to wear. Personal Protective Equipment (PPE) shall be used in conjunction with other efforts to eliminate hazards such as engineering controls, guards, and safe work practices.

Remember, using the right PPE could save your life.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

Comments: _____

Safety Experience



15 Years to D-I-E!



It Was the Obituary that Really Set You to Thinking!

Local man, age 36, dies after 15 years in the hospital, following construction accident.

Fifteen years of staring at the same ceiling;

180 months of complete dependence on others;

780 weeks of hope-erosion, with expenses towering to crowd everything else off the skyline;

5,475 days of waiting for night;

5,475 nights of waiting for days;

131,400 hours of four walls, fading flowers, medicinal smells, useless sympathy;

7,884,000 minutes of vegetation with roots withering in hopelessness, spirits shrinking in stagnation

473,040,000 seconds of death before burial, and probably because of some “little” rigging error that a hanging scaffold gave way and the end dropped. One man was killed instantly. Another is now selling real estate, unable to work in the trade.

This man wasn't so lucky.

Death at 36! After 15 years of dying!

Within that period of time, a man usually marries, has a family, climbs upward in the world, travels, fishes, hunts, begins to mature, and enjoys a million sights, sounds and sensations.

Over these same 15 years, this man was a castaway on a lonely bed-island. He absorbed tasteless food and slept a desperate sleep as he suffered, cursed and cried. He felt the bitterness as his insides knotted at such ordinary sounds of laughter, free footsteps and hearty talk. For every person who dies in construction accidents, many others spend agonizing weeks, months and lifetimes of disability.

Are You Bored with All This Safety Talk?

You risk a lifetime of disability or 15 years of dying when you forget to be safety conscious. Do you realize this? Do you know what errors are yours, and what you do to correct them?

The life you save might be your own.

Date:	Company Name:	
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A Priceless Possession



Let's take a quick elementary test...how many basic senses are we endowed with at birth, and name each of them. Is it one...two...four? I'm sure we'll all agree the answer is five, and these five senses are SIGHT...HEARING...TASTE...TOUCH...SMELL.

And now to pose a more serious problem. Supposing we were faced with the sacrificing of four of these five basic senses, which one would we retain? If we were to go along with the average, we definitely would retain the sense of sight. And yet on so many occasions how lightly we treat this most priceless possession.

The eye is so much like a camera, and yet so intangible is its value. A camera consists primarily of a lens, usually rather expensive. This lens gathers light rays, focuses them, and forms an image on a sensitized film, thus mechanically creating a picture.

The eye, too, has a very valuable lens. The eye also consists of the retina, iris, cornea and optic nerve. These five members of the human body, in an almost supernatural fashion, coordinate their activities to transmit impulses to the brain and it is these impulses that provide vision, the miracle of color, perception and the ability to learn. Eighty percent of everything we know comes through the eyes.

It is a moral obligation to take care of our eyes, but we still neglect them. I recall investigating an accident in which a man lost the sight of one eye when a grinding wheel exploded. This man wore a pair of safety goggles at the time of the accident, but unfortunately they were on his forehead. The ironic part of the story is that the injured person was an ardent camera "bug", owned many valuable cameras, and the lens of each was well protected with a leather cap type cover, this to eliminate the slightest scratch or piece of lint. Something that could be judged in dollars and cents was worth protecting, but his own sight was just taken for granted.

Medical science today works near miracles, but we were given just two eyes and science will not replace them. Let's keep them and take care of them.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

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Attendees:

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Acetylene and Fuel Gases



There are so many fires and explosions each year from failure to use and handle acetylene and fuel gases safely that I figured I ought to talk about them. I won't have time today to do more than hit the high spots, but I'll try to cover the more important points.

First of all, it's easy to keep out of trouble with these gases if you'll just use your head. Perhaps the trouble is that people don't take the hazards seriously enough.

All these gases catch fire very easily. Any spark will set them off. That means "no smoking" around them. Keep them away from fire or anything very hot. It doesn't take red heat to set them off. From 600° to 800° will do it.

The lower explosive limits of these gases (the smallest amount which, mixed with air, is explosive) are low, about 2 to 3 percent mostly—not much higher than the lower explosive limit of gasoline (1.5 to 2 percent). Also, the explosive ranges of the liquefied petroleum (LP) gases are not much different from the explosive range of gasoline.

Acetylene and hydrogen are something else again. All mixtures with air that have between 4 percent and 74 percent hydrogen are explosive. Acetylene is worse still, for its explosive range is 2.6 to 80 percent. Such wide explosive ranges spell extra hazard because when either of these gases gets to air you're almost certain to have an explosive mixture.

All the LP gases are shipped and handled in cylinders under pressure. In most cases, the pressure is less than 300 pounds because at ordinary temperature it doesn't take much pressure to make them change to liquids. But hydrogen won't do that, so the cylinders are filled to 2,000 pounds pressure. The cylinder pressure for acetylene is 250 pounds. There's a point about this that I want to emphasize.

Acetylene is likely to blow up all by itself if you compress it. Up around 25 pounds it becomes what the chemists call "unstable". It doesn't need a spark or flame to explode. It may not blow as soon as it is compressed, but it will, given time enough. So 15 pounds per square inch has been set as the highest safe pressure for acetylene as a gas. But under pressure, acetone, a close relative of the acid of vinegar, dissolves acetylene in big amounts. In the acetone, which is a liquid, it doesn't explode under pressure. So an acetylene cylinder is full of a porous substance filled with acetone. It gives up the acetylene as the pressure is bled off.

Somehow or other, even some welders don't know about this. At any rate, once in a while some guy blows himself up trying to compress acetylene. For example, a welder decided to set up his own shop. He figured that he was being charged too much for acetylene. So he got an acetylene generator, a small second hand air compressor, and a good strong water tank, and hooked them up. The apparatus worked fine for a few days, and then it let go and the whole place came unstuck. They buried what was left of that fellow.

Acetone loses its ability to hold the acetylene if you heat it up much; so the cylinders have fusible plugs that will melt at about the boiling point of water. If an acetylene valve freezes up, thaw it out with lukewarm water, never hot water. Pour the water over the valve, not the cylinder. Never use a flame of any kind. That goes, too, for any compressed gas cylinder, though it's most important for acetylene.

Since the LP gases are liquid under pressure, the cylinders should be used valve end up only. Otherwise you may get shots of the liquid. The same thing applies to acetylene. A shot of acetone won't help the welding job a bit. Hydrogen does not liquefy under pressure.

The LP gases are all much heavier than air. If there's a leak, they'll go down more than up, but they'll spread out through the air (diffuse), too. Acetylene is just a little lighter than air – not enough to count. Hydrogen, though, is about fourteen times lighter than air. That means that if you turn it loose it will go upstairs fast. So look up under the ceiling for hydrogen, down at or under the floor for LP gas.

Handle all compressed gas cylinders carefully. Remember that the metal is fighting pressure all the time unless the cylinder is completely empty. Also, don't forget for a minute that the wallop a cylinder gets if it's dropped onto a concrete floor can break the valve assembly off. If that happens, there's real trouble. If you bang two cylinders together hard, both might let go.

Finally, if you're going to do any welding or use my LP gases for any purpose whatever, be sure you know the safe methods and use them. Use your head and stay safe and healthy and avoid a fire.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Comments: _____



Avoid Unsafe Acts



An accident is an unplanned event caused by either an unsafe act, an unsafe condition, or both. Injuries and accidents trace back to unsafe acts or conditions.

Injuries on the job just don't happen – they are caused! An injury is the final link in a chain of events or circumstances. We are fortunate indeed to be able to say that most unsafe acts or conditions do not complete the chain of events that leads to an injury-producing accident.

Let me compare unsafe acts or conditions to something that has probably thrilled most of us ever since we were kids. I'm thinking of several acts in the circus that always thrill the crowds that attend. One act that would certainly be classed as an unsafe act would be the one done by the trapeze performers. Another would be the one put on by the trampoline stars.

I am always fearful that the man swinging through the air will just misjudge his descent and come down in such a way that he straddles the framework which holds up the stretched fabric. What a surprised guy he would be!

In fact, I also wouldn't engage in some of the unsafe acts that I've seen workers commit. Again, I wouldn't want to run the risk of getting hurt.

Some figures have been rather widely used to show that only 30 out of 330 accidents result in injuries. These figures also show that out of the 30 injury-producing accidents, 29 require first aid and only one is serious enough to disable the worker or to cause loss of time from the job.

What does this mean to you? It means that you can't afford to take a chance on an unsafe act or an unsafe condition. The odds are that if you continue to take chances you will be involved in an injury-producing accident. Your injury could very well be so serious that it would cause you to lose time from work or be laid up in the hospital.

I suppose that each of you realizes that both unsafe acts and unsafe conditions cause almost every kind of work accident that can happen or has happened. Let's talk a little about the four most common sources of injury-producing accidents in the order of their frequency:

1. Manual handling of materials is the source of about one-fourth of all compensable work injuries. Injuries due to improper lifting occur quite often. There are also many causes involving bruised and smashed fingers and toes.

2. There are many types of falls; falls on slippery floors and tripping over objects left on floors, falls on stairs, falls from slight elevations, and falls from heights.

3. Next are the injuries caused by falling or moving objects. You can get hit with anything from a falling tool to a load swung by a crane.

4. Machinery is safe if you know how to handle it and if you utilize the safety devices. Machinery is dangerous for the inexperienced worker to operate, or for the one who takes chances.

I'm going to be looking for unsafe conditions on the job and I'll be trying to spot the unsafe acts that each of you may engage in without realizing it. Here are some of the unsafe acts that I am going to be looking for:

1. Operating machines or equipment without authority, failure to secure it or warn others
2. Operating equipment at an unsafe speed
3. Bypassing safety devices
4. Using unsafe equipment or using equipment unsafely
5. Handling of material in an unsafe manner
6. Taking an unsafe position or posture
7. Indulging in horseplay or inattention
8. Failing to use protective equipment

You, too, can help in our safety program if you'll agree to practice safety and to warn others when you see them endangering themselves. If you see a dangerous condition, report it to me! Always wear your protective clothing where your work demands it.

Let's leave the unsafe acts for the circus performer!

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Comments: _____



Avoiding the Flames



This topic deals with fire “prevention” not putting out fires. There’s a significant difference. It’s much easier to prevent a fire, then it is to “put out a fire”. So for the next few minutes, let’s talk about your company’s attitude towards fire prevention.

Does Your Company Have Fire Drills, a fire prevention program, and safety talks on how to put out fires? Is there a company policy that prohibits smoking on the jobsite? Does everyone have enough common sense to not smoke or have fires near flammable material (i.e., gasoline, kerosene, mastics, etc.)?

All of These Are Examples of “fire prevention” programs, each of which is designated to prevent fires, help put out fires, and control fires that may start somewhere on your jobsite.

Here Are Some One-liners about Fire Prevention:

- Prohibit smoking anywhere on the jobsite, including the foreman’s trailer
- Post NO SMOKING signs where there are stored flammable materials
- Establish fire drills to make employees aware of the hazards of fires
- Have fire extinguishers mounted on the jobsite where employees can clearly see them
- Post emergency phone numbers on the jobsite (fire department, hospital, gas company)
- Prevent “sneaking a smoke” behind the storage trailer
- Remind delivery personnel that this is a NO SMOKING jobsite
- Remember that “smoking breaks” take place off the jobsite
- Don’t allow employees to carry cigarettes (or cigars) in their lunch box, or in their pockets
- Have a company policy that addresses “no smoking” rules on the jobsite

Will These Fire Prevention Steps really prevent fires? Yes! But only if everyone on the jobsite knows the steps and rigidly adheres to the policies. Do your part as a professional construction worker and join the fire SWAT team.

You’ve Just Put Out a Fire where paper and cardboard ignited from a welder’s torch. Although the fire appears to be completely out, you still see wisps of smoke at the base of the fire. The welder had a bad burn on his hand and forearm, and is complaining of severe pain. What do you do now?

Here Are Some Definite Steps to Consider:

- Call the fire department (or 911) and report the fire and its current status. Ask for a fire unit to prevent spreading.
- Tell the dispatch that there is an injured worker and an emergency rescue squad is needed.
- Move the injured person from the vicinity of the fire.
- Find the nearest first-aid giver on the jobsite and ask him/her to treat the victim. Burn victims usually enter shock and should be kept calm and warm.
- Remove any jewelry from the victim and pour water on the burned area. If clothing is sticking to the burn do not remove it. Keep the burned area continually saturated with room temperature water. Do not bandage the burned area. Keep it continually exposed to air and moist with water.
- Find one or more people to monitor the fire area and closely watch for fire and rescue vehicles.
- Keep traffic and unauthorized people from the accident area.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

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Attendees:

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Battery Bombs



Just about any motorist who has driven during the winter months has seen a car battery jumped. The procedure has always looked simple: hook the terminal of the dead battery together with jumper cables, and the dead battery will receive enough assistance to turn the engine over and start the car.

The only drawback to this method is that many car batteries have exploded and showered motorists with sulfuric acid. One Ohio doctor, for example, reported treating three battery explosion victims in a single month.

Here's what causes the explosions: Every car battery produces hydrogen gas as part of its chemical process. When a battery is being charged (as is the case when two batteries are hooked to each other with jumper cables) more of this hydrogen gas is produced. If the gas is allowed to accumulate in a small area, any spark or flame will set it off.

To avoid battery explosions you want to avoid concentrating the hydrogen gas as well as any spark or flame that might set it off. So take the following precautions:

- Don't smoke when working near your car's battery.
- Do nothing that would make a spark near your car's battery. A favorite test of many motorists is to hook the two cables to the booster battery and then touch the other ends of the cables together. If they see a spark, then they are assured there is a current. If the hydrogen gas in or over your battery contacts that spark it can explode.
- The last cable connection should not be to the grounded terminal of the dead battery, but to a ground away from the dead battery. Attach the last cable clamp to the engine block, generator/alternator bracket or any other ground at least a foot from the dead battery. The reasoning is sound: This last connection will complete the electrical circuit and when any circuit is closed there is apt to be a spark. Naturally you want to keep any spark away from the hydrogen gas in the battery.
- Remove the vent caps on both batteries and inspect to see that the fluid is at the proper level before connecting the cables. Leaving the battery vent caps off during the charging cycle enables the generated gases to escape more readily.
- Remember that the last two connections in the jumping procedure should be to hook the grounded terminal of the booster battery to a ground at least a foot from the dead battery.
- If you cannot tell which terminals are grounded and which are not, it is advisable to have someone who can tell make the connections.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Comments: _____

Supervisor Training



Hazard Recognition Training for Supervisors—Introduction



Introduction

1. What: This training is designed to assist the supervisors in recognizing and mitigating hazards on their job sites.
2. Goal: The goal of this course is to reduce the safety related incidents on the job sites through proactive safety measures employed by the Supervisors. The proactive plans will result from the Supervisors being able to recognize and predict the hazards and the possible outcomes and mitigating those hazards before an incident occurs.
3. Why: We feel that this course is necessary for all Supervisors to provide a safe and healthy workplace for all employees. It is the law and a moral obligation for all Supervisors to actively participate and lead the jobsite for safety. Additionally, any time that an incident occurs on a job site, there are financial ramifications that will reduce the profitability of not only the job, but also your company as a whole. Also, each incident will lead to increased Recordable Incident Rates, and EMRs. In some cases these increased Recordable Incident Rates and EMRs will actually prevent us from being awarded future jobs and may also result in your company not being allowed to even submit bids for future projects.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Electrical Hazard Recognition Training for Supervisors



Hazard Recognition Training for Supervisors—Electrical Safety

1. Electricity is one of the most powerful forces on earth. Each year hundreds of lives are lost, and thousands of individuals are injured as a result of electricity in one form or another. On the jobsites, electricity is in constant use, the equipment may not be in the best of condition, the extension cords are running everywhere, water is present, and unqualified people interact with the electrical systems and equipment constantly. All of this combined forms a major exposure to the possibility of electrical incidents.
2. Your company's Safety Manual should identify the policies for basic electrical safety. Your policy should be reviewed and understood.
3. Assured grounding is the process by which we, as electricians, can verify that the safety and protection equipment and systems are in place and working to ensure the safety of everyone on the jobsite.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Hazard Recognition Training for Supervisors—New Hires



Hazard Recognition for Supervisors

1. New hire employees are a unique hazard on the job site. Whether they have never before been on a construction site or have previously worked for another contractor who did not have a real safety program. In either case we need to identify them as a potential hazard and deal with them accordingly. This toolbox talk will cover some of the ways that new employees can be a hazard and give the Supervisor some assistance on how to mitigate the hazards created by the newly hired employees.
 - a. Statistics show that new employees are more likely to fall victim to work related injuries.
2. The first step in dealing with the increased hazards caused by new employees is to speak with each new employee, except those office and administration personnel who work in a business office and never visit a project or jobsite. These new employees are required to receive extensive training prior to their initial assignment. Additionally each employee should then receive site specific training immediately upon arriving at the job site and before being allowed to start work on the job site. Even after all of this training the hazard related to the new employee is not totally mitigated. The next step is for the new employee to be assigned a mentor to guide, train, and supervise the new employee for their first 30 days of employment. When all of this is put together successfully, we can feel somewhat assured that the new employee has at least begun his transition to the incident free culture that is our goal.
3. Take a look at any jobsite as if you had never been on one before. The jobsite is like a different world, one that is in a state of total confusion and constant change. Add in the large number of people doing different things and going in different directions and it is easy to see why new employees get themselves into trouble. As a supervisor it becomes your responsibility to assign a mentor to the new hire that has the ability to recognize the hazards that the new employee is exposed to, recognize the new hire's human curiosity, identify the new employee's lack of focus, and then guide the new employee toward the ability to recognize and deal with the hazards on their own, or with the assistance of their co-workers and supervisors.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

Comments: _____



Hazard Recognition Training for Supervisors—Outline



1. Introduction

- a. This toolbox talk will cover the hazards related to newly hired employees
- b. Statistics show that a majority of incidents occur to employees who have been with the company for 1 year or less.

2. New Employee Safety Orientation Policy

- a. Required Training
 - i. New Hire Orientation
 - ii. Hazard Communication/SDS
 - iii. Lockout/Tagout
 - iv. Electrical Safety
 - v. Ladder Safety
 - vi. PPE
 - vii. Hand and Power Tools
 - viii. Fall Protection
 - ix. Scissor Lifts
 - x. Housekeeping
 - xi. Proper lifting procedures

xii. Safety Expectations

xiii. Asbestos Awareness

b. Project Specific Orientation

c. Mentor Program

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

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Comments: _____



Proper and Timely Reporting Is Crucial for Treatment and Prevention



Whenever any accident or incident, no matter how minor, occurs it is critically important to report the occurrence immediately so that the injured person can receive prompt medical treatment if necessary. Even if medical treatment isn't needed, it is still important to report the incident immediately so that the circumstances which created the incident can be corrected before a more serious incident happens.

When the Field Manager first hears about an incident or accident his/her first response needs to be to immediately contact the Division Safety Manager (DSM). Immediately means NOW, not at the end of the shift. By notifying the DSM immediately it gives the DSM the opportunity to begin an investigation into the causes of the incident and will prevent any re-occurrence that may cause more serious injury. It also allows the DSM to begin the process of making sure that the employee receives the correct medical attention if necessary. Remember that the initial report to the DSM is the first step in an extensive reporting and recordkeeping process.

Investigation: Root Cause Analysis

The purpose of any investigation is the "Root Cause Analysis". This analysis is to determine the events, circumstances, tools, materials or procedures that actually caused the incident/accident to occur. This investigation needs to begin as soon as possible so that the evidence and site are still as close as possible to what they were at the time of the incident. The purpose of this investigation is to eliminate the cause not to assign blame.

1. The Field Manager must investigate all near miss incidents.
 - a. The incident investigation will include, but is not limited to:
 - i. Statements of facts from the person(s) involved in the incident.
 - ii. Statements of facts from the involved person's Field Manager.

- iii. Statements of facts from any employee witnessing the incident.
- iv. Statements of facts from any witness to the incident not working for your company.
- v. Date and time of the incident.
- vi. The Safety Manager must be notified within one (1) working day.

As the incident is being investigated it is important to separate the facts from opinions. The idea is to gather the facts of the incident, determine the root cause, and eliminate the hazard. Use the Safety Manual to assist you in determining the root cause and the corrective measure. Your investigation should answer the questions; “Who, What, When, Where.” Then ask the question “Why”, the “why did this happen” question needs to go beyond the obvious and identify the one thing that if it could be changed would not only have prevented the incident, but would have removed the hazard completely.

Date:	Company Name:	
Project Number/Name:	Meeting Location:	Person Conducting Meeting:

Items Discussed: _____

Problem Areas or Concerns: _____

Attendees:

Comments: _____
