

MANAGING JOBSITE SAFETY

by Phil Swords

Job-site safety isn't an exciting topic, but as insurance costs go up due to outstanding injury losses and OSHA penalties, it's one we can't ignore. Each job-site injury has an associated medical cost (see Figure 1) but that's just the beginning.

Other costs are lost time, lost wages (both of the injured, and of the person assigned to take them to a medical facility if required), job interruption, possible penalties as a result of the injury, scheduling problems, and, finally, all of the associated paperwork that can and generally does run into hundreds of dollars' worth of staff time per incident. Administering the paperwork for major injuries can run into thousands of dollars over several years.

On top of this, when one of your people gets hurt and has to take time off the job, it won't be easy to replace him, given today's labor supply. It's particularly difficult if the person is a key person on the crew.

Much of this aggravation and cost is unnecessary. These injuries generally happen because workers either aren't supplied with hard hats and safety glasses, or aren't wearing them. They happen because of the safety program is not being adhered to—or there is none.

You Are Responsible

As a contractor, you are responsible for safety on the job site. The language of article 10 in the 1987 edition of the AIA contract makes it pretty clear: "The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract." It goes on to state that the contractor is responsible for the safety and protection of employees, the work and equipment, and other property at the work site. In addition, the contract states that the "contractor shall give notices and comply with applicable laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on safety of persons or property...[he] shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection...[he] shall exercise utmost care and carry on [hazardous] activities under supervision of properly qualified people...[he] shall further designate a responsible member of [his] organization at the site whose duty shall be the prevention of accidents."

There's more, but the bottom line is that as a contractor, the responsibility for safety on the job site starts and remains with you. If there are damages or losses, you must pay for them.

Protect Yourself

You can protect yourself from these damages and losses with good insurance and a working safety program. A good safety program comes from the

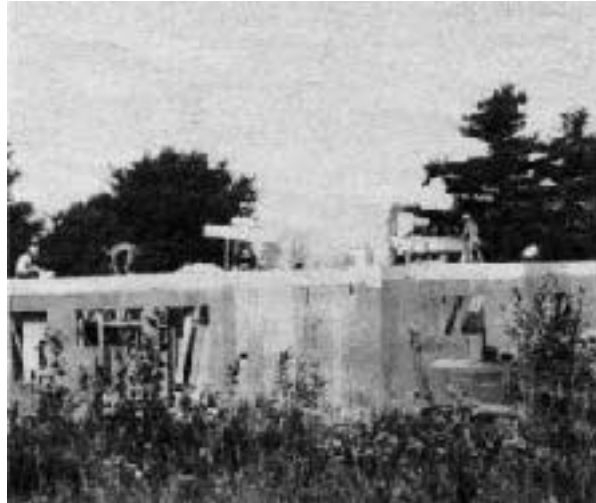


Figure 1: Typical Jobsite Injuries and Their Associated Medical Costs*

Injury/Event	Associated Medical Cost
Slipped on the ice, a minor sprain resulting	\$195
Hit the thumb or fingers with a hammer	\$350
Ladder not secured and tipped over, minor sprain resulting	\$30
Slipped on job-place material, resulting in major back injury	\$38,800 plus permit settlement
Slipped, concussion resulting	\$9,800
Cut finger while drilling	\$300
Foreign body in eye	\$75
While shoveling concrete, it splashed into the eye	\$120
While installing door hardware, pinched finger	\$265
Strained back while lifting	\$300

*The associated medical costs are actual costs based on the experience of the author; they may be more or less depending on your location and other circumstances.

Establish a program to maintain your employees' health and your company's bottom line

top down and the bottom up. All members of management should promote it and participate in it. And all personnel should be educated in safety if the pro-

gram is going to be taken seriously.

The primary person responsible for making safety happen on the job site is the project superintendent (or job fore-

man). In addition to his other administrative duties, this individual is responsible for his own personal safety and that of the contractor's employees, and for the safety of all the subcontractors and suppliers that may come on to that job site. The management must provide this individual with the means to accomplish this goal, which includes the authority to make policy, enforce it, and require all of the suppliers, vendors, and subcontractors to abide by it. It also includes the authority to conduct safety inspections on the site, investigate any accidents that happen, establish procedures for the treatment of injuries, and provide safety training.

A good safety program should aggressively maintain safe and healthful working conditions, furnish the best available mechanical safeguards (such as hazard warning tapes) and personnel safety equipment (such as hard hats and safety glasses), provide adequate medical and first-aid facilities for work-caused injuries and illnesses, and provide continuous safety education. A successful safety program addresses both prevention and treatment issues.

Prevention

Minimally, you must meet the legal requirements for safety. Be familiar with the regulations and requirements set by the Occupational Safety and Health Administration (OSHA). Many states have their own OSHA office (for example, Vermont has a VOSHA office as part of its Labor and Industry department). State OSHA offices may adopt the federal plan verbatim, but they have the authority to adopt tougher or different standards (as long as they are no less restrictive than the federal plan), and some states have done that. So be sure to check with both federal and state levels.

You can ensure that your workers abide by these regulations and any additional safety requirements through education and routine inspections. Here are some ways to go about it:

Conduct weekly "tool box" safety meetings.

A tool box meeting is a short safety meeting conducted by the superintendent and participated in by workers. To make them effective:

- Hold them at a specified time.
- Keep them short.
- Limit the subjects.
- Plan the meeting.
- Promote worker interest and involvement by discussing conditions actually occurring on the site.
- Review new, difficult, or unusual jobs and any special safety requirements involved.
- Keep the meetings objective.
- Don't overlook discussing near-misses (accidents that almost happened are warnings).
- Have the employees participate.

Inform every employee about what's required. When a new employee is hired on the job site, be sure his orientation includes:

Sign Language

Danger:

Do Not Get On or Off While in Motion
Keep Off
Blasting—Keep Away
Open Trench

Caution:

Watch Your Step
Slow
Eye Protection Must Be Worn in This Area
Watch Out For Persons Below
Keep Walkways Clear
The Wearing of Hard Hats, etc.
Keep This Door Closed
Do Not Operate Without Guards

Directional:

First Aid (Arrow)
Fire Extinguisher (Arrow)

Informational:

No Smoking
Not an Exit
Out of Order
Emergency Information

Safety Instruction:

Report All Injuries Immediately No Matter How Slight
Be Careful—Nails—Turn Them Down
Think—Take No Chances



Figure 3. Signs that warn of hazards and provide instruction are an important part of a safety program. This is just a partial list of those available.

- the nature and scope of the overall contract
- any particular hazards peculiar to the project
- the importance of keeping the safety of fellow workers in mind
- the importance of wearing proper work clothes and protective equipment
- the fact that continual disregard of safety instruction or safety practices will be considered grounds for termination of employment
- information as to the location of first-aid facilities

Maintain first aid resources. Keep first aid supplies complete and handy, and make sure everyone knows where they are. In addition, be sure that there is an emergency card posted by the phone where everyone can see it, with the names, addresses, and phone numbers of the fire and police departments, ambulance company, and rescue squads. It's ideal if you can have someone trained in first aid on your staff. We're fortunate in Vermont to have several volunteer groups that teach first aid and CPR.

Do a daily walkaround. It is the 2x4 with the nail sticking out of it and the spot that didn't get shovelled after the

ice storm that can cause problems. Part of housekeeping should be a daily check to seek out accidents about to happen, such as the tool perched precariously on the top of a stepladder.

It's also important to do a more in-depth safety check at the site. A checklist like the one shown in Figure 2, covering all potential problems, should be used. OSHA provides a form listing those areas they've cited most frequently, which can be adapted to your use.

In Vermont, we also have the benefit of "Project Worksafe," a program operated by the state's Dept. of Labor and Industry. It provides free on-site safety consultation. Worksafe will check the site for you, tell you what you must do to bring the job up to OSHA (and VOSHA) standards, allow you time to get the job done, and then come back to the job site and critique it with you to see how well things are going. In addition, if you request it, Worksafe staff will follow up with periodic visits to your site. It's an excellent service, and if a similar program exists in your state, I'd highly recommend using it.

Mark hazards well. Many hazard markers and safety signs are available (see Figure 3) that can help workers avoid injury. Some of the larger insurance companies will provide them at no cost through your insurance agent. OSHA also requires that you post the notice "Safety and Health Protection on the Job," which tells employees what their rights are, and employers what their obligations are regarding safety.

Finally, don't forget about non-construction injuries. Driving while under the influence of alcohol or without seat belts can make a big dent in your labor force. If invited, your state troopers will bring their educational program to your job site. I've found that such programs can help reduce the severity of driving-related injuries substantially. The National Safety Council Film Library (3450 Wilshire Blvd., Suite 700, Los Angeles, CA 90010) also supplies rental videos on this subject. (It's also a good source for other types of safety and health videos, including the work-related injury, employee drug abuse, and prolonged illness.)

Treatment

Assuming you've got your safety program up and running, and an accident still happens, what should be done? First obviously, the injured party must be treated. If you're lucky enough to have personnel on your crew trained in first aid or CPR, use them. Use your emergency numbers, and if necessary, get the injured party to a medical facility (either by ambulance or a designated driver).

Next, you need to get the job back up and running. Usually an injury will disrupt the job site, and people won't be working up to their productive capacities. Assure everybody that the injured party will be properly taken care of, and that as soon as you have word of the extent of the injuries and the injured party's condition, you will inform the crew.

While the incident is fresh in everyone's mind, start the paperwork. If the injury was minor and treated on site, and the worker resumed his task, your paperwork is greatly reduced. However, if the injured was treated off-site, the "First Report of Injury" form must be filled out and filed within 72 hours with the state and your insurance company. (The forms are available from your state or possibly your insurance

Jobsite Safety Review Checklist

Condition	Date Completed	Condition	Date Completed
Notification		Excavations	
1. Safety signs in place	_____	1. All shoring and earth retention systems properly designed and in place	_____
2. Emergency phone numbers posted	_____	2. Excavations properly dewatered	_____
3. Safety meetings held	_____	3. Has condition of excavations open for an extended period of time changed at all (erosion, water content)?	_____
4. Fire extinguisher signs posted	_____	4. Are all excavations large enough to complete work without unreasonable restriction?	_____
5. Job safety representative designated	_____	5. Excavations ventilated and free of flammable and/or toxic gases	_____
6. Fire alarm signs posted	_____	Personnel Protection	
7. All exits clearly marked	_____	1. Building perimeter protected at each floor per OSHA for the respective conditions	_____
8. "No Smoking" signs posted	_____	2. All floor openings protected or closed off	_____
9. Evacuation plan posted	_____	3. Ladders properly set and secured	_____
10. Hot work permits secured	_____	4. Temporary bridges supported and with rails	_____
11. All personnel and pedestrians notified of loud construction noises	_____	5. All traffic areas free of materials and debris	_____
12. Warnings and instructions to the public posted	_____	6. All flammable debris removed daily	_____
Safety Equipment and Clothing On Hand		7. Adequate temporary lighting in all areas	_____
1. Fire extinguishers (correct quantity/type)	_____	8. Temporary heaters properly located	_____
2. First-aid kit (filled and supplied)	_____	9. All materials and debris away from temp heaters	_____
3. Stretcher	_____	10. Oxygen, acetylene, and other fuel tanks properly stored and secured	_____
4. Temporary fire alarm operating	_____	11. Confined spaces properly ventilated	_____
5. First-aid room designated	_____	12. All drinking water potable	_____
6. Safety harnesses, ropes, slings (inspected)	_____	13. All work areas sanitary	_____
7. Safety nets (inspected)	_____	Pedestrian/Public Protection	
8. Hard hats, eye protection, gloves, safety shoes	_____	1. Entire site protected from unauthorized entry	_____
9. No loose clothing or jewelry	_____	2. Dangerous areas within the site restricted from nonconstruction personnel	_____
Job Site and Personnel Safety/Security		3. All sidewalk sheds, barricades, overhead protection, and warning lights in place	_____
1. All construction vehicles properly identified	_____	4. Temporary pedestrian traffic areas:	_____
2. No privately owned/operated vehicles on site	_____	a. Properly illuminated	_____
3. Fuel tanks and combustibles stored properly	_____	b. Free of trip hazards, debris, materials, sharp objects	_____
4. Good housekeeping (no trash accumulation)	_____	5. All construction noises held to reasonable levels	_____
5. No unauthorized fires, burning, welding, etc.	_____	6. Work performed in areas occupied by the public properly authorized	_____
6. Smoking prohibited in sensitive areas	_____	7. Appropriate warnings and instructions posted	_____
7. Fire extinguishers and protection equipment present in hot work areas	_____	Liability	
Temporary Power, Lighting, and Small Tools		1. All release forms executed and delivered for trades to use staging, hoists, elevators, and equipment	_____
1. All temporary electric systems properly grounded	_____	2. Arrange for OSHA safety inspection to advise of additional recommended precautions	_____
2. All extension cords of three-wire type	_____	3. Arrange for job site inspection by liability insurance carrier. Either secure a favorable written report, or immediately make all recommended corrections and reinspect	_____
3. All tools and equipment insulated and/or grounded	_____		
4. All hand tools in good repair	_____		
5. All extension cords in good condition	_____		
6. All work areas properly lit	_____		
7. All electric panels and exposed wiring inaccessible to unauthorized personnel	_____		
8. All extension cords and temporary power receptacles using ground fault circuit interrupters	_____		
9. All grounding conductors tested for continuity	_____		
10. Temporary power constructions closed to weather	_____		

Figure 2. In-depth inspections include many aspects of the job, from signage to liability releases. A good checklist can help you avoid missing any potential problem areas.



“Why Me?” From Someone Who Learned the Hard Way

by Gregory Smith

My grandfather started teaching me about power tool safety when I was twelve years old. At the age of sixteen I inherited most of his tools, and I can still hear him cautioning me about safety. So five years ago when making the next-to-last cut of the day, I was amazed to look down and see my left hand missing three fingers and part of another.

For all of you now wondering if this could happen to you—it can. I could go into a lecture about tool guards, and the correct positions or use thereof, but I wasn't doing anything wrong. I've relived those thirty seconds many times over. My only error was allowing my blood sugar level to get real low. It was 5:15 p.m. on a Sunday (not having taken the weekend off), and I had skipped lunch.

Because of the accident, I've had lots of opportunity to chat with my reconstructive surgeon—six hours the first night, three more later, and many office visits thereafter. He believes strongly that if there was one thing he could change in the construction industry, it would be to make everyone take a break and eat or drink something at 10:30 a.m. and 3:30 p.m. every working day. He says this because 90 percent of those he sees in surgery have empty stomachs when they come in (which is convenient for the surgeon).

Think about it for a moment—that last hour-and-a-half before lunch and quitting time. Do you feel a little

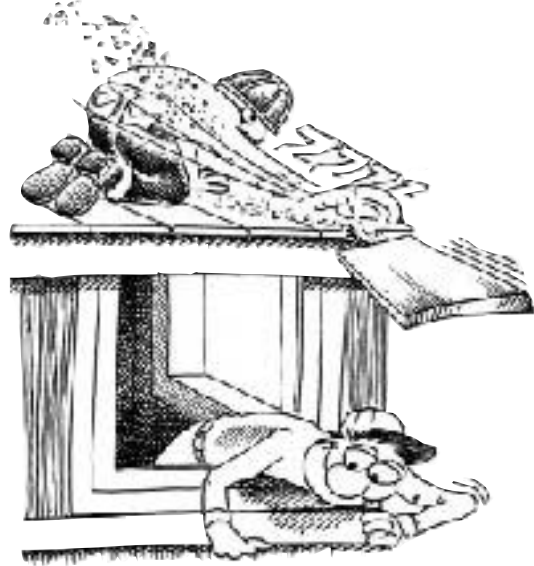
tired? Are you a little slower, and maybe a little less careful? I got caught and so can you, but perhaps the plan outlined here can save you a finger or three:

- We have sane working schedules with breaks: In the winter we work five eight-hour days, with 15-minute breaks at 10 a.m. and 3 p.m., and lunch at noon. In the summer we work four 10-hour days (7:30 a.m. to 6 p.m.), with 15-minute breaks at 10 a.m. and 4 p.m. and lunch at 1 p.m.
- We spend the breaks deciding what needs doing, and eating something high in energy—coffee with sugar, cake, or doughnut. (Take your choice, but take something!) You'd be surprised how much fifteen minutes of thinking and a snack can help you accomplish in that last hour of the day.

There are other benefits to our work schedule, besides saving a digit. Working four days a week lets us make up for a lost day or catch up if we're behind on a deadline job. If all goes well we have an extra day for sailing, or whatever your pleasure is. No matter how much you love the work—and I do—we all need some time to rest our minds and bodies. ■

Gregory Smith is a custom home builder and downer of Energy Conservation Builders in St. James, N.Y.

Work Smarter, Not Harder: A Message to the Crew



We all want to keep from getting hurt on the job. We can't pass the buck about safety, because it isn't a one-person job. We're responsible for the next guy who uses the tools, materials, and equipment we've prepared or used. We're responsible if we see someone working in a dangerous position. He may not be experienced enough to recognize the hazard, or he might be distracted. Don't worry about being considered a wise guy. Here are some ways we can help each other work safely:

1. Set an example in the safe use of tools and equipment. Help the inexperienced worker learn the right way.

2. Keep machine guards in place, and don't leave a trap for the other guy, such as removing the guard from the table saw.

3. Report machine defects or accident hazards to your supervisor promptly.

4. Encourage everyone to report to first aid at once, for every injury, no matter how slight. A sliver in a finger can land up in the heart and result in open heart surgery—believe it or not, it's happened.

5. Encourage the wearing of proper clothing and personal protection equipment.

6. Ask questions if you don't fully understand your job.

Safety Log

YEAR 19 _____

Month	Day of Week	Time of Day	Age
January _____	Monday _____	1. Start to 9:00 am _____	17-21 _____
February _____	Tuesday _____	2. 9:00 am to noon _____	22-25 _____
March _____	Wednesday _____	3. After lunch to closing _____	26-30 _____
April _____	Thursday _____		31-35 _____
May _____	Friday _____		36-40 _____
June _____	Saturday _____		40-45 _____
July _____	Sunday _____		45-50 _____
August _____			over 50 _____
September _____			
October _____			
November _____			
December _____			

Cause of Injury

1. Minor Burn _____
2. Stepped on nail _____
3. Nail puncture, other _____
4. Fell _____
5. Slipped _____
6. Lifting _____
7. Carrying _____
8. Pulling _____
9. Equipment slipped or fell _____
10. Foreign body in eye _____
11. Splinter _____
12. Bumped Body Part _____
13. Caught body part in equipment or on something _____
14. Using hand tools _____
2. bruise _____
3. sprain/strain _____

Body Part

- A. Eye _____
- B. Head _____
- C. Tooth _____
- D. Mouth/lips _____
- E. Neck _____
- F. Shoulder/Upper arm _____
- G. Elbow _____
- H. Wrist _____
- I. Hand/finger _____
1. cut _____
2. bruise _____
3. sprain/strain _____
4. broken _____
- J. ribs/chest _____
- K. hips _____

- L. Leg 1. cut _____
- M. Knee _____
- N. Ankle _____
- O. Foot _____
1. cut _____
2. bruise _____
3. sprain/strain _____
4. broken _____

P. Back _____

Number of Incidents by Job Site

- | | |
|----------|-----------|
| 1. _____ | 2. _____ |
| 3. _____ | 4. _____ |
| 5. _____ | 6. _____ |
| 7. _____ | 8. _____ |
| 9. _____ | 10. _____ |

agent.) Statements from witnesses must be taken. Don't wait to do this while witnesses forget what they've seen, or leave the job. If the injury was to a subcontractor or supplier's employee, then your paperwork should at least note the situation on your daily field report in accurate detail. These notes will come in handy days, weeks, months, or even years later, if there is litigation.

If the injured party was a key person, you should sit down, the sooner the better, to look at how the injury affects the schedule, and decide on adjustments. Your goal is to get the team running again as quickly as possible. Depending on the size and number of personnel in your company, another way to keep track of safety problems as they occur is to keep a safety log (see Figure 4). Over time, a log can point out trends, which in turn can help you zero in on the cause: equipment that might be causing accidents, an employee who is accident prone, or a super that doesn't have a good regard for safety, for example.

Your insurance company and agent will be keeping logs of their own, using information from the "First Report of Injury" forms you have filed. Most likely your insurance company will make a quarterly visit to review the situation and make recommendations if you've had recurring problems or incidents of a serious nature. So it's important to keep your own records in order.

Figure 4. In companies with several crews working, it makes sense to keep a safety log. This way you can keep an eye out for employees prone to accidents, or a piece of equipment that consistently causes injuries.

Pay A Little Now...

If you have taken the steps to set up and provide a safe working place, a safety program, and a good insurance program, you'll find that your costs will be far less than if you had no program at all. You can pay a little now or a lot later. You'll incur costs for the program: for staff time, training, safety inspections, protective equipment, and signs.

But you will recoup these costs in several ways. There will be dollar savings, because there will be fewer accidents, and fewer penalties for violations. Your jobs can be done on or ahead of schedule because you won't have injury delays that cost you both time and money. And certainly you've reduced the possibility of serious injuries to people in an industry which is virtually 100 percent employed. These benefits may be difficult to measure in dollars, but the fact is, you will increase your profit potential by doing your work on schedule and safely. You will have better control of your costs because you spent the time and money on a fixed cost—the safety program and the right insurance—rather than on the variables associated with accidents and the potential of increased insurance premiums. These variables

can affect your bidding, possibly to the point of making you non-competitive.

This brings us to the subject of estimating. At the time you estimate each job, include the cost of safety in your estimate. If you know that the job will require hard hats, safety glasses, and steel-toed boots, provisions for all of the crew should be included in the estimate. Look over the job to see what it's going to require for signs, lights, proper staging, shoring, and fencing.

Working safely is part of "working smarter, not harder." I've seen the effects of a good safety program, where our injuries went from over 100 in one year, to 40 the next, and 30 the year after that. We also came through several OSHA inspections in real good shape.

If after all this, you still feel you cannot justify the expense of a good safety program, sit down and take a look at what your costs will be if you don't have one. I think you'll discover that it's certainly the lesser of several evils, if for no other reason than to protect your most important investment, your personnel. ■

Phil Swords is administrative assistant at Carara Concrete Products, Rutland, Vt.