

Safety Lessons

Construction can be a dangerous business. Without the right combination of training, experience, good judgment, proper equipment, and old-fashioned good luck, the chances of incurring a work-related injury are significant. Here are the war stories of nine *JLC* readers who didn't beat the odds — and the lessons they learned as a result

Just a 4-Foot Fall

by Forrest McCanless

My misadventure happened late last year while I was working on a new porch ceiling. I was no more than four steps up my stepladder when one of the ladder's back feet worked its way to the edge of the porch and slid off (I hadn't yet installed the railing).

Though the drop was only 4 feet onto grass, I didn't want to tangle in the ladder, so I jumped back, away from the edge, and landed outstretched on the porch on my left side and arm.

Immediately, my left arm went numb; as I got up I could see my forearm was bent in a new shape and looked about an inch shorter. But it wasn't until I took off my toolbelt — one-handed — that I realized some arm bone was stuck in my sweatshirt at my waist. I knocked on the door and asked my client to take me to the hospital.

When I finally spoke with an orthope-

dic surgeon at the ER, I explained through clenched teeth just how important it was to have my arm back quickly — I was still figuring I'd get a cast on and leave before lunch. But he told me I had a compound ulnar fracture (the bone sticking out below my wrist) and multiple distal fractures of the radius, along with a dislocated wrist.

In addition, the ulnar (or funny bone) nerve had damage; within a few days I would discover I couldn't move my fingers laterally, or grip with my thumb and forefinger.

A cast was indeed possible following surgery, but only after several days of waiting for the swelling to subside.

However, if I could live with a few extra scars and an odd structure called an "external fixator" attached to my arm, the doctor was willing to reassemble my wrist and set the bones right away.

The fixator was a jointed metal beam clamped to pins screwed into solid bone on my arm and hand; it rode a few inches above my arm. It proved to be a huge conversation starter, particularly since I had to keep the incisions exposed, with all the metalwork and sutures and swelling out in plain sight.

Luckily, there was drafting and design work to do that I'd been putting off, so I was able to get back to productive — though one-handed — work on the



Courtesy Forrest McCanless

computer later that same week.

Since the fixator allowed some forearm rotation (the screwdriver motion), I tried to keep my arm moving as much as possible during my convalescence, using some stretching and strengthening exercises I found on the Net.

Still, I wasn't able to move my ring finger and pinky at all. The pinky stuck out laterally from my hand and kept catching on door frames, and I couldn't even squeeze toothpaste. For a while, my doctor thought that perhaps the ulnar nerve had been severed, which would mean five to six months for regrowth and recovery.

After only 39 days, the fixator and pins came off, and the doctor made another large incision on the inside of my wrist to determine the cause of the continuing ulnar palsy. Fortunately, it was scar tissue (which was removed) that was pinching the nerve, not a severed nerve. Afterward, I continued with my exercises, slowly gaining strength and feeling in my hand.

As I write this five months later, my hand and arm function is almost normal, although a few odd conditions — an old broken middle finger that now locks closed when I make a fist (I have to use my other hand to snap it back straight); my inability to get my wedding ring back on; and my five suture scars — serve as reminders of my 4-foot fall.

So what did I learn from my \$26,000 tumble from such an insignificant height?

To check my ladder each time I climb it, and to wear the right shoes — I had been wearing gardening slip-ons, and I think they contributed to my fall.

But most important, I learned to be more respectful of *all* construction activities, not just the ones that seem dangerous.

Forrest McCannless is a designer and general contractor in Oxford, Ga.



Courtesy Forrest McCannless

A Shocking Prescription

by Joe Tedesco

Early in my career as an electrician, I had nearly completed a small side job at a drugstore when I noticed that the stockroom was lit by only a 4-foot-long, two-lamp fluorescent fixture hanging from the ceiling. I checked with the druggist to see if the lighting in the room was adequate, and he asked if I could raise the fixture just a couple of links before I left.

"Sure, no problem," I replied, pulling

out my link pliers and pushing my step ladder into position.

But when I opened up one of the links and separated it from the rest of the chain, I instantly felt as though I were being kicked in the head by a horse. A fault in the fixture — which was supplied by just two wires and had no equipment grounding conductor — had energized the chain; I'd received a potentially fatal shock.

Fortunately, the druggist was nearby and shut off the wall switch when I yelled out — with this kind of shock I couldn't let go of either the chain or my pliers.

Shaking and sweating, I had to rest for quite a while after that close call. And in the years since, I've never forgotten to respect the power of electricity. I de-energize circuits that I'm working on and use safety gloves, insulated pliers, and other personal protective equipment whenever warranted.

By the way, in recognition of the serious shock hazard present when splicing

the grounded (neutral) conductor of a ballasted fluorescent light fixture, a provision has been added to the 2005 NEC; it requires a local disconnecting means for indoor fluorescent fixtures that use double-ended lamps and that can be serviced in place.

The provision takes effect January 1, 2008; for more information, see 2005 NEC 410.73(G).

Joe Tedesco is a licensed master electrician, an IAEL-certified electrical inspector, and moderator of JLC Online's electrical forum.

Wrist Management

by Ken Gaumond

I quit work early one day so that I could get some work done on my own house. I was in the middle of a porch project that was moving along far more slowly than I would have liked; I figured I had just enough daylight left to set up saws, ladders, and my compressor and to nail up some 2-by subfascia to the rafter tails.

After cutting the first board to length, I scrambled up my 6-foot stepladder and tacked the first section of subfascia in place, then began nailing it off with my framing nailer. For balance, I reached up with my free hand to grab on to the same rafter I was nailing the subfascia into.

But as I brought the nailer up into position, the nosepiece caught just enough of the top edge of the board to depress; it fired a 16d framing nail over the top of the board, through my watchband, and into the underside of my wrist. When I looked at my hand, only 1/2 inch of the 3 1/4-inch-long nail was still exposed.

My first thought was to pull out the nail immediately. I feared that the glue on the nail would set up quickly, especially if it had penetrated the bone. But I also real-

ized the nail might have perforated a vein and could be cutting off the flow of blood. What to do?

Without further thought, I grabbed hold of the clipped-head nail and gave a quick, steady tug. Out it came, followed by a frightening stream of blood. Scenario B — the vein! — had come true.

Holding my hands high, pressing my right thumb into my left wrist and squeezing as hard as I could, I yelled for my co-worker to call 911.

After an ambulance ride and four hours in the emergency room, I left the hospital with a very sore wrist from my small puncture wound, a couple of stitches, and considerably more respect for my pneumatic tools.

The incident did have a silver lining: When I returned from the hospital, all of my cords and hoses had been coiled up and my tools neatly put away by the supervisor of the roofing crew that had also been working on my house that day.

He's been my business partner ever since.

Ken Gaumond is a general contractor in Auburn, Mass.

Knee a Poor Substitute for Sawhorse

by Mark Parlee



Courtesy, Mark Parlee

While framing an apartment complex, I was in the process of cutting plates for closets, but my mind wasn't really on the job. I was going through a divorce at the time and was supposed to leave around lunchtime for a child custody hearing.

Outwardly, though, I was in cutting mode: I'd grab each board from a stack of 2-bys, prop it on my knee, and quickly cut off the marked ends.

Clearly I was operating on autopilot, because as I brought my saw down to make a cut I missed the 2-by altogether. Instead of plunging into wood, the spinning blade plunged full depth into my leg, leaving a 2¹/₄-inch-deep, 8-inch-long kerf clean through my kneecap, through leg muscle, and into bone.

I don't remember feeling any pain at first, but I do remember worrying about ruining my favorite pants and wondering how many stitches it would take to sew up my leg.

When I looked up and saw the stunned face of my boss, then looked back down at the injury, I realized that

stitches wouldn't be an option, and that the pants were the least of my worries: My leg was opened up so wide I could have put my fist in the gash.

The wound required two surgeries — one to clean it up and another a couple of days later to stitch everything back together once it was clear there was no bone infection — plus a long period of recuperation.

Then I began physical therapy. I spent 100 painful 2¹/₂-hour sessions just trying to break up scar tissue and regain my leg's range of motion. When I was able to start riding a bike, I worked my way up to 100 miles of roadwork a day to help heal and strengthen my leg and regain flexibility. After seven months, I was able to go back to work.

Since then, I've recovered virtually normal function in my leg. And while I admit that I still occasionally prop a 2-by on my knee, you can be sure that I now remain completely focused on what I'm doing when I'm using my circular saw.

Mark Parlee owns Parlee Builders in Des Moines, Iowa.

Caught Beneath a Rolling Tractor

by Rick McCamy

Almost 20 years ago, I was working as a foreman for a small landscaping firm. We were at a site with a large, steep hill in the backyard, which we intended to plant with ground cover. Three-quarters of the way up the hill was a grade break, with the steeper section of the hill below and a gentler rise above.

Although I don't recall the hill's actual pitch now, it seemed obvious to me at the time that we would have to amend

the entire slope by hand, with picks and shovels. But the owner of the firm had a nice tractor, and he wanted to use it on this job.

Large by residential landscape standards, his John Deere 760 was equipped with a roll bar and a seatbelt, but not a full protective cage.

The boss felt we could save time by driving the tractor around the back and working the top quarter of the slope with the tractor's tiller. I thought this

was risky and told him so repeatedly; still, I allowed myself to be convinced to get up on that tractor.

Our technique was to back the tractor up to the edge of the grade break, lower the tines, and till uphill. After four or five passes, I was thinking I had been a weenie for voicing my concerns.

But when I backed up to make the last pass of the day, gently applying the brakes to stop the tractor as I came to the top of the break, the tractor kept on moving. An uneasy glance down at the wheels confirmed that it wasn't rolling, but sliding on loose soil.

As the tractor dropped backward over the break, my first thought was to jump clear, since I wasn't wearing the seatbelt. Then I remembered that there was a house below me, and tried to control my descent by steering the rig down the hill. One twist of the wheel, though, and the John Deere flipped into a roll, moving sideways across the face of the slope.

Co-workers later told me that I rode through one roll in the seat, holding on to the steering wheel. I was catapulted off the tractor and hit the ground hard, knowing that something big was following close behind.

Looking uphill, I was terrified to see the tractor tumbling toward me, with blue sky showing underneath. It was completely airborne. "This is gonna hurt!" was my first thought, followed by, "Maybe it will miss me." It didn't.

Out of breath from the blow to the ground, I had begun to scramble away on my belly when the falling tractor stopped me and knocked me onto my side.

My face was pushed hard into the dirt and I felt the pressure on my body build up until the weight required every ounce of strength to resist. I was 35 and in excellent shape; I flexed all the

muscles in my body and wondered, "How much of this can I take?"

Pop, pop, pop ... my ribs were breaking ... pop, pop ... five in all. Another pop! as my left shoulder dislocated. Snap — like breaking a 2x2 — my left arm broke at the ball joint.

Suddenly the pressure was gone and sunlight came flooding back as the tractor rolled off me and on down the hill. After taking out 16 feet of welded wire fencing, the machine came to rest upside-down with the seat impaled on a 4x4 post — one of those rare situations where the operator survives because of not wearing a seatbelt.

As for me, I slid down the hill and came to rest near the John Deere. Within moments, I heard the siren of the ambulance coming for me.

Five days later, I was released from the hospital. Today, at age 54, I take 2,400 to 3,000 mg of Motrin a day and am a candidate for a steel shoulder replacement — yet for most of the last 19 years I've enjoyed the use of my natural shoulder, thanks to the work of an excellent surgeon.

That was the last time someone convinced me to do something I felt was unsafe. Since then, I've never operated equipment anywhere near a slope without a full protective cage. When I think a task is dangerous, I try to subcontract the work out to a specialist with more experience.

And I encourage all employees to protect themselves if they believe an assignment is too dangerous. Contractors need to reexamine their methods and not simply dismiss employees' concerns when they have misgivings about the safety of a particular job.

Rick McCamy designs and manages residential remodels in Walnut Creek, Calif.

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Vanity Thumb

by Bill Wise

For more than 50 years, I've built custom cabinetry in my basement workshop, and while I've made my share of stupid mistakes, none have resulted in a serious injury — until recently.

I'd just finished making the final cuts for a piece of furniture that had gone through a number of client revisions, and I decided to clean up some of the sawdust while the vacuum system was still running.

My table saw has a shelf under the blade with a pan for the vacuum collector, but some sawdust always clings to the pan and needs help getting to the collector's center hole.

Thinking that the saw was off, I reached in with my left hand to clear the sawdust, felt a strange sensation, and

quickly jerked my hand back out of the pan. My thumb was almost completely sawn off at the joint; it was held in place only by a 1/8-inch-wide piece of skin attached to my index finger.

I've always worn hearing protectors when running shop machinery; in this case, I'd forgotten to switch off the saw, and with my earmuffs on I couldn't hear that it was still running. I was lucky I didn't cut my entire hand off.

My wife, a registered nurse, was on the first floor when I shouted out, "Let's roll! I've sawn my thumb off!"

While she ran to get the car started, she told me to stop in the bathroom and wrap the thumb in a wet towel. Then we were off to the emergency room at the nearby teaching hospital, where she'd worked for 18 years.

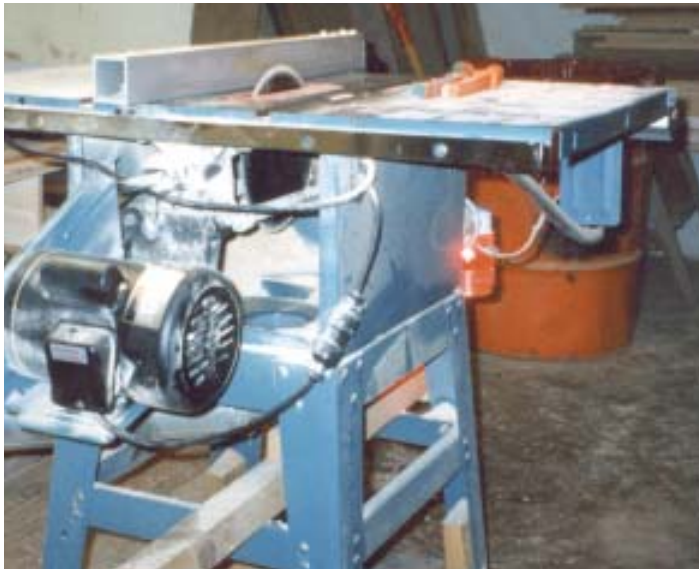
Not 20 minutes after the accident, I was getting anesthesia as the doctors prepared to reattach my thumb.

Today, three years later, almost no one notices that my 'vanity thumb' is about 1/4 inch shorter than my working thumb; the color is fine and the nail is normal. It doesn't bend except as a fixed unit on that side of the palm, and it has limited feeling.

It's not very strong, either; since both tendons are connected just below the fixed thumb joint, it doesn't grip effectively.

I still work in my shop. But because most shop machines don't have an "on" light to indicate that they're running, I have equipped all my equipment with clearly visible, red-bulbed porchlight-type lamps wired into the power switches.

Bill Wise is a retired electronics technician and a lifelong woodworker in Winston-Salem, N.C.



Courtesy Bill Wise

After his accident, the author equipped his table saw with a clearly visible running light; now he knows if the saw is on even when he's wearing hearing protection. Note the absence of a blade guard between the underside of the saw's blade and its dust-collection port.

The Hard Way to Learn About Radial-Arm Saws

by Thomas Dickey

My dad was a union carpenter. Beginning at age 9, I accompanied him on many of his side jobs and learned how to safely use circular saws and table saws. I never used radial-arm saws, though, so of course my first job in the trades involved cutting with one of them.

My boss was strict, and when he gave me the cut list and said, “No waste! This stuff is expensive,” I paid attention.

I started cutting the longest pieces first, leaving several foot-long lengths from which to cut some 4-inch mitered returns. While making my second cut on the smaller pieces, the piece jerked,

drawing my left thumb into the blade.

It took 150 stitches, a skin graft, and a year of mental recuperation before I touched a power tool again.

Even after 20 years of carpentry, my working but deformed thumb reminds me daily of my three personal rules for working with these saws — three rules that I broke that day: 1) Never cut anything from a piece less than 2 feet long; 2) Keep hands at least a foot away from the blade, and use a clamp if you can't; 3) Always use a blade guard.

Thomas Dickey is a project manager for Case Remodeling in Clinton, Mass.

Nearly Nailed in the Eye

by Jason Seltin

When I install fiber-cement siding, I fit vinyl siding blocks around building penetrations; to carve them into shape, I use a utility knife. During one job, it occurred to me as I wrenched the blade through a curved cut for an electrical entrance that the tensioned blade tip could snap off and strike me in the eye.

So I put on my safety glasses.

Since I need prescription glasses for everything except up-close work, I don't usually wear safety goggles. But in this case, I left them on when I started installing the siding.

About an hour later, I stumbled while standing up after firing a nail into a section of siding; I fell against the house and painfully twisted the wrist of my hand holding the nail gun. When I tried to push off from the house, I inadvertently pushed the nosepiece into the side of the house and pulled the trigger. At that point, the gun was about 8 inches away

from — and aimed directly at — my face.

I felt a slight bump, but no pain. I checked for blood, but found none; the only sensation was a tickling in my eyebrow. Thinking that there was a nail sticking out of my head, but that I should *not* remove it, I ran inside to check in the bathroom mirror. Once I'd flicked on my flashlight, I could see the chisel point of the nail in the beam, the very point tickling my eyebrow hairs. I pulled off the safety glasses and rubbed the spot. Relieved, I found nothing: no bleeding, no brains leaking out. And there, embedded in the lens of the safety glasses I normally never wear, was the nail from the gun.

Since then, I've made a habit of wearing safety glasses regularly. And whenever the local high-school building program is having trouble getting students to wear their safety glasses, I loan them my pair.

Jason Seltin is a builder in St. Johns, Mich.

A Devastating Fire Caused by Oily Rags

by Steve Malcom

It was about 2 a.m., just before Thanksgiving, when I got a call from the alarm company indicating that there was a problem in one of our company buildings.

These calls usually turn out to be irritating false alerts, but this time, the alarm was real: Our custom paint and finishing shop was on fire and the fire department was already on the scene.

When I arrived 15 minutes later, most of the building was in flames. Apparently, one of our employees — despite the availability of approved containers — tossed a handful of oily rags into an open trash can, where they spontaneously combusted and started the blaze.

Fortunately, nobody was hurt and the fire department prevented the blaze from spreading to our other buildings and to the neighboring woods.

But our paint shop was totally destroyed. This same building had housed our design department and provided storage for many of our tools, including expensive items like laser levels and portable generators.

It had also contained a variety of specialty hardwoods we'd been saving for just the right application.

Everything was a total loss.

This experience taught us something besides the obvious. Yes, it's important to dispose of solvent-soaked rags in a sealed container designed for that purpose and to continually train employees in matters of safety.

But it's equally important to make sure your insurance coverage is kept up-to-date.

Our insurance settlement covered only about half the cost of rebuilding and replacing our lost equipment; it took more than a year to get our building rebuilt and get back to where we were — a painful lesson both personally and economically.

Now we review our coverage regularly with our agent and make necessary adjustments to our policies as our business grows.

Steve Malcom owns Boothbay Homebuilders in Boothbay, Maine.



Photos courtesy Boothbay Register

HAVE YOUR OWN SAFETY STORY?

We're already planning next year's safety feature and are looking for contributions from *JLC* readers. If you have a tale to tell, send it to Safety, *JLC*, 186 Allen Brook Lane, Williston, VT 05495; or e-mail it to jlc-editorial@hanleywood.com.