

Carving Safety Manual



CARVING SAFETY MANUAL



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INTRODUCTION

Many carvers assume nothing bad will ever happen while carving, and they are usually right. Carving IS relatively safe. However, it does present risks that range from minor cuts and abrasions to possible severe life-altering injuries or death. This is true whether we are at home or not.

The GUILD¹ cares about your safety and does not want you to get injured at a sponsored activity or elsewhere. Injuries are preventable and most can be prevented or minimized by proper choices and actions. The GUILD will do its best to provide a safe environment and help you and others stay safe. However, you play a big part and we need your best effort to be knowledgeable about safety and practice good work habits.

At home, we are used to a small nick, antiseptic, and a Band-Aid. No big deal. We know where to find the first-aid kit, treat the problem, and get on with our work.

When we carve away from home, things are a little different. Carving may be at classes, rendezvous, clubs, friends, shows, or demonstrations. Incidents-big or little-might happen to us or others, and we might not know where to find a first aid kit. Knowing where to find the first aid kit and how to obtain advanced emergency medical care are important.

In any case, an injury to ourselves or someone else should be a “wake-up” call. As important as it is to treat injuries, it is much better to prevent them. Safe practices are required at GUILD functions and should be followed at other settings.

We are guests when we are in the Guild of Oregon Woodworkers shop. We are also guests when we attend classes at other shops or studios, senior centers. We must respect and honor the host’s workplace and practices. We can show that respect by practicing safe carving.

We trust that you intend to never get injured and will do your best to work safely. Safety matters—it all starts with intent.

¹ The term GUILD refers to both the Oregon Carvers Guild and the Carving SIG of the Guild of Oregon Woodworkers (GOOW)

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SCOPE OF THIS MANUAL

This manual applies to all persons carving under the auspices of the GUILD during sponsored activities. It is hoped that you will follow safe carving practices everywhere. All hand carving tools, and power tools specifically mentioned in this safety manual are covered.

Not covered:

- Angle grinders
- Chain saws
- Any tool not mentioned

EMERGENCY RESPONSE

Report all injuries and close calls immediately to the instructor or GUILD representative. These reports give us the opportunity to address the risk, so that we can take steps to prevent a similar or more severe incident from happening. Even minor injuries require care and reporting.

Before commencing carving, know the location of:

- The first aid kit
- Potential dangers of the shop
- All exits
- Information required to communicate to 911 operators, such as address and directions to the shop from the street.

During the event of a serious injury or illness:

- Stay Calm
- Assure that the scene is safe
- Alert the instructor immediately
- Contact EMS and be prepared to provide the site address
- Provide care for the injured person if you are able and it is safe to do so
- Send someone out front to guide emergency responders to the injured person

After the event: write up a report detailing the events leading up to the incident and actions taken during and after the incident.

GENERAL GUIDELINES

Murphy's Law tells us that accidents happen at the worst possible time and cause the most damage. However, there are attitudes and actions that can minimize the dangers inherent to working with sharp objects.

Foster a Prevention Mindset

Shop Safety is a continuous practice of situational awareness, choices, and actions. Use all your senses. Does the situation LOOK RIGHT, SOUND RIGHT, SMELL RIGHT, FEEL RIGHT? Safety is about proper tool use, awareness, personal conduct, and a safety mindset.

Respect is an important part of the prevention mindset. By respecting your own capabilities and limitations you are a safer person to be around. You respect others by considering their presence and activities. You respect your tools by not asking them to do more than they were

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designed to do. You respect your project by getting help when you need aid or advice when you need it.

It is important to support a culture of politely calling out unsafe or questionable practices. Conversely, be open to being questioned about your own safety behavior.

Fatigue creates danger. Taking breaks—both physically and visually—will reduce fatigue.

Significant injuries can occur not only from an acute incident, but also from long term exposure to irritants and repetitive operations. Those dangers include hearing loss, carpal tunnel, arthritis, lung injury, and blisters.

Smart people make mistakes too—accidents can happen to anyone. Having a prevention mindset will help reduce or eliminate injuries.

Understanding the GUILD Environment

The host of a GUILD event may be the Guild of Oregon Woodworkers facility, a publicly accessible space or a private shop. Non-GOOW facilities may have additional rules that are above the GUILD baseline, but GUILD rules must always be adhered to. The shop owner or delegated shop attendant is in charge and must be obeyed.

When using any shop, respect the rules, property, and processes. In general, you are to:

- Note the location of and read posted emergency instructions.
- Locate the shop's first aid kit and water source for washing injuries when you first arrive.
- Take measures to guard against viruses, bacteria, fungi (mold), vapors (VOC), and dust.
- Space yourself apart; give space to others.
- Use workbenches at the right height for you to avoid back and joint injuries.
- Use good lighting and magnification to protect your eyes.
- Check for wood hazards—such as nails or stones—which are not always visible.
- Dress appropriately for the shop environment.

Non-GOOW facilities must have:

- Information for calling 911, the ambulance will need the address and other pertinent information.
- First aid kit
- Water source for washing injuries

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Respond Appropriately

Understand common causes of accidents and STOP if you or a workmate are in a dangerous situation. Make sure you are present and attentive and do not work if:

- Tired
- In a cluttered or hazardous workspace
- In a hurry
- Complacent
- Distracted
- Missing protective gear
- Taking shortcuts
- Impaired by drugs (prescription or otherwise) or alcohol

Make sure you are working safely:

- Keep body parts out of the path of unwanted energy, such as a sharp edge in motion
- Your work is clamped or otherwise secured
- Do not use excessive force
- Work in a comfortable position
- Be knowledgeable about the tools, materials and supplies you are using

Fear is your friend - listen to it, stop if in doubt, and ask others for advice.

Not all accidents involve injuries. A broken or malfunctioning machine is an accident, as well as a dangerous shop situation. If an accident occurs, stop work immediately and follow the rules of the shop for accidents. Always notify the person in charge of the facility.

If a minor injury does occur, treat it quickly to avoid infections. Always report all injuries to the person in charge of the facility.

PERSONAL PROTECTIVE EQUIPMENT

Carvers are required to provide their own, in good-condition, well-fitting personal protective equipment for attendance at all GUILD activities.

Eye and Face - Required eye protection must have a Z87 marking in the lens and be Impact Rated with the manufacturer's marking followed by a "+" sign. Safety glasses with side shields, face shields, or goggles are to be worn at all times where there is a potential exposure to airborne particles. Examples include sanding or using power tools and where there is the potential for splashing or spraying substances.

Hearing - Ear muffs, plugs, ear canal covers or custom plugs should be worn when exposed to high noise levels. If you have to raise your voice to be heard, you should be wearing hearing protection. Additionally, hearing protection is required when power tools and their associated vacuum systems are in use in the shop.

Hand - Cut resistant gloves are not cut proof but will prevent or minimize the consequence of a sharp tool striking your hand. A cut resistant glove with a rating of A4 or higher should be worn on your non-dominant hand while carving. A thumb guard is strongly encouraged. Latex or nitrile gloves should be worn when working with solvents and some finishes. Know the safety requirements of the chemicals that you use.

Torso - A sturdy apron is recommended to help prevent or minimize injury to your torso, should a tool slip. A lap board is highly recommended when carving in your lap.

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Respiratory - Carvers with wood-dust sensitivities or are in an environment where there is sanding, power carving, or other dust-producing activities, should wear respiratory protection capable of filtering that dust. Respiratory protection can prevent chronic respiratory problems from long-term exposure to dust.

Feet - Sturdy, closed-toe, slip-resistant shoes are required for GUILD activities. Use footwear that is tough enough to prevent injury from very sharp or heavy tools.

HOUSEKEEPING

The fundamentals of good housekeeping are cleanliness and order. Good housekeeping can prevent slips, trips, and falls. Keep your work area free from clutter. Periodically sweep up chips, dust, shavings, and debris.

Alert others to power tool cords and route or tape them down to minimize trip hazards.

Any items stored on the ground such as back packs and tool bags, should be stored so they do not present a trip hazard to you or someone walking by.

Clean up your work station and help others to clean common areas before leaving for the day. This not only makes it safer for all who tread there, but also is a show of respect for the host location.

Note: It is not the Classroom Assistant's or host's job to clean up after you.

HAND TOOL CARVING SAFETY

Carving is relatively safe, but under certain circumstances, carving can be lethal. Carving injuries can go beyond bleeding and include damage to eyes, lungs, ears, or joints.

General Guides

Every tool is designed for a specific purpose. Do not deliberately misuse any tool. Tools should only be used for the task they were designed for.

Take care when transferring tools. Many carving cuts are from storing or retrieving tools, not just when carving.

In addition, adhere to the following tips:

- Flee or Fix unsafe carving environments that are too crowded, dusty, noisy, or messy.
- Keep all flesh behind sharp edges or out of their path (out of the “Line of Fire”)
- Avoid carving towards yourself.
- Small, controlled cuts pose less risk.
- Do not gesture with tools in your hands and stay away from carvers who do.
- Never try to catch a falling tool.
- Start with sharp tools; keep them that way.
- Carry your own common first aid supplies.

Protect yourself with lap boards, carving gloves, aprons, and dust masks when appropriate.

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Knives and Palm Tools

When using knives, it is highly recommended to wear a glove and thumb guard. Buy a good glove - rated at an ANSI cut level 4 or above. A glove will slow down but might not prevent a slicing cut. However, a glove will not stop a poke cut.

Wear hand protection, unless you really know what you are doing; in that case, wear it anyway. Even experienced carvers slip up sometimes.



Long-Handled Gouges

There are a few simple rules in handling gouges that are meant to be held in two hands or struck with a mallet:

- Keep the fewest tools you need nearby and store the rest elsewhere.
- Keep both hands behind the cutting edge
- Anticipate tools rolling off your bench - consider carving a flat side on one surface of a round handle
- Use roll guards on your bench to keep tools from falling off
- Do not try to catch a falling tool



Power Carving Tools

Power carving tools can be lethal and generate dangerous levels of dust and debris. Eye, lung, and hearing damage are hazards beyond skin injuries.

Some general rules:

- Abrasive power tools can cause skin injuries, which are usually very memorable, long-lasting, and hard to heal.
- Tuck in or tie back loose clothing, dangling strings, and long hair.
- Do not put yourself between the tool and your work.
- Do not use power tools without training.
- Do not use others' tools without their permission.
- Remove all jewelry before using powered equipment.
- Position safety guards correctly on powered tools. Never modify or remove a tool manufacturer's safety guard.
- Use appropriate work holding devices-vises, clamps, hold-downs, bench hooks, or jigs.
- Use a clamp if you need your hand to be closer than 6" to the bit, blade, or burr.
- Use push sticks as appropriate to keep your fingers 6" away from cutting or rotating blades.
- Don't challenge any power tool They are quicker than you can react and more powerful and impersonal.

Rotary Tools with Flexible Shaft or Hand-Held Motors

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Secure the workpiece or item that you are working on in a vise or other work holding device. Holding it with your hand can result in serious hand injury.

Always use a proper dust collection system or wear a respirator to prevent inhaling dust particles, polishing compounds, or other debris into the lungs.

Never wear a standard, loose-fitting carving glove when using a Foredom or similar rotary tool. Those types of gloves can get snagged on a rotary burr. Some carvers advocate using a leather glove for holding small objects when using a rotary tool. Leather gloves should be used only if there are no parts of the glove that can snag.

Do not wear loose fitting clothing or jewelry since they can become entangled in the rotating accessory. Do not wear items such as neckties, necklaces, or bracelets when operating power tools. Be sure to tie back or secure long hair.

If the motor is separate from the handpiece (as with a Foredom), secure the motor to a hanger or other secure mounting. Flexible shaft power tools can “jump” at start up or vibrate during operation. The tool should be properly secured to prevent it from vibrating off the motor hanger, work bench, or wall.

For added safety and comfort while using this power tool for carving or other applications, it is recommended that you wear a heavy canvas or leather apron. It will protect you from debris and chips as well as help prevent injury if the handpiece slips off the workpiece. It will also help prevent loose clothing from getting caught in a rotating cutter, burr, or other accessory.

Never wear open shoes or sandals. Use footwear that is tough enough to protect your feet from falling tools.

Never operate any accessory above its maximum rated speed. Always find out the manufacturer’s speed rating before using accessories.

Never use or continue to use any accessory which appears to be damaged, loose, vibrating, or out of balance. Inspect each accessory for cracks or flaws before using it. Avoid knots, imperfections in the wood, or metal objects like nails, which could damage or catch the accessory.

Always insert the shank or arbor of an accessory or mandrel into the collet or chuck of the handpiece as far as possible in order to provide proper support and tighten the collet or chuck securely.

Never use excessive side pressure which may bend or break the shank or arbor of an accessory. Let the speed of the accessory do the work.



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ACCESSORY POWER TOOLS

If you have not had instruction and experience in the safe use of the equipment in this section, you must self-identify to the instructor and be supervised while using the equipment in a class put on by the GUILD.

Bandsaw

The Bandsaw has a thin vertical blade that allows cutting curves, resawing, and making large depth cuts on thick material. Observe the following operational safety rules to minimize the risk of an accident.

Start with a risk assessment to ensure a safe work area:

- Approach your work and the bandsaw with attention to the task at hand!
- A three-foot perimeter around the saw should be kept clear of people, debris and sawdust that impairs traction or footing to avoid slips and falls.
- Keep bystanders away from the right-hand area of the saw. Broken blades tend to fly to the right.
- Eye and hearing protection is required.
- Dust protection is strongly recommended.
- Remove loose fitting clothing, gloves, jewelry, and tie back long hair.
- Give the work your undivided attention.

Always disconnect the power before changing the blade or performing any other maintenance operation. Make all adjustments to the bandsaw while the machine is off and stopped:

- Check the blade tension and tracking before starting. The blade should be 1/32" from the rear roller bearing behind the blade.
- Make sure that the upper- and lower-wheel guard doors are closed before running.
- Keep the blade guard as low you can and still see the cutting line (1/4" or less above the work).
- Turn on dust collection before starting the bandsaw.

During operation of the bandsaw:

- Follow the 6" rule from the blade. Always keep fingers 6" from the path of the blade. To control the stock, use push sticks, feather boards, jigs, or any other safety device when cutting small or short stock.
- When cutting stock that will not sit flat on the table, construct a jig to hold it stable. Seek help if you do not know how.
- Keep a balanced stance at the band saw.
- Cut at a moderate feed rate into the blade—do not force a cut.
- Never clear small pieces while the blade is moving.
- Always keep your fingers and hands away from the path of the blade, use a push stick.
- Use a "V" block when cutting cylindrical stock.

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- Turn the power off immediately and stand clear if you hear a clicking sound or the blade breaks.

Best practices:

- Cut relief cuts prior to cutting a long or tight curve. The relief cuts will free the blade of the tension of the tight curve and the wood will fall away. The blade size will dictate the radius of the cut.
- While it is permissible to back out of a straight cut while the saw is running, backing out of a curved cut can pull the spinning blade off the wheels with potential to cause a serious injury. Do not do it.
- If the work is too large for one person, get help holding the stock.
- When cutting with the table at an angle, clamp a block to the table to prevent your stock from slipping off the table.

Drill Press

The drill press has a motor driven head with a chuck that accepts bits or cutters. It also has an adjustable table on which the work is mounted. It is operated by pulling a handle which lowers the rotating drill bit into the material.

Observe the following operational safety rules to minimize the risk of an accident. Start with a Risk Assessment to ensure a safe work area:

- Approach your work and the drill press with attention to the task at hand!
- A three-foot perimeter around the drill press should be kept clear of people and debris that impair traction or footing to avoid slips and falls.
- Eye and hearing protection is required, dust protection is strongly recommended.
- Remove loose fitting clothing, gloves, jewelry, and tie back long hair.
- **DO NOT PLACE FINGERS OR HANDS IN PATH OF THE DRILL BIT.**



Before drilling operation:

- Make sure the drill press is off before making any adjustments.
- Keep all guards and covers on the machine when it is on and running.
- Make sure the size of the bit is equal to or less than the capacity of the drill press.
- Do not exceed the recommended speeds for the type and size of drill bit being used or composition of the stock being drilled.
- Centerpunch the drill-hole location into the stock.
- Insert bit into drill chuck and tighten with the chuck key. Remove key from the drill chuck before starting the drill press. Never leave the chuck key in the chuck.
- Use a clamp to secure the work when using a large diameter bit when the work piece is small (6" or less) or when the table is at an angle. Never attempt to handhold small or flexible stock while drilling.
- Before starting the drill press, check again to see that the chuck key has been removed from the chuck.

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Drill press operation:

- Drill into cylindrical stock using a “V” block.
- Long stock should be drilled with the excess to the left of the operator. If the stock rotates it will hit the post, not the operator.
- Support the underside of the stock to be drilled with a backer board secured to the drill press table.
- Only start the machine with the table clear of everything except the stock you are drilling.
- Keep hands and fingers at least 6” from rotating drill bits.
- When drilling deep holes, frequently raise the drill bit from the hole to remove cuttings and cool the bit.
- If a drill bit binds, turn off the drill press and carefully turn drill chuck backwards by hand to free the bit.
- NEVER reach around or under a rotating drill bit or grab the chuck to stop a drill press. This can result in hand puncture or other serious injury.
- Turn the drill press off before looking up or walking away from the machine.
- The drill bit and shavings are hot immediately after drilling, let them cool down.

SCROLL SAW

A scroll saw is a relatively small electric reciprocating saw that is used to cut intricate curves in wood, metal, or other materials. It is essentially a powered hand coping saw or fretsaw.

Before using the scroll saw:

- Secure saw to work bench or stand with clamps or mounting hardware.
- Secure work bench or stand to floor or lock wheels if on casters.
- Never use the upper arm as a lifting point.
- Make sure blade tension is properly adjusted.
- Material hold-down must be properly set and remain in position during use for inexperienced scrollers.
- Never turn the saw ON before clearing the table of all tools, wood scraps, etc., except the workpiece and related feed or support devices for the operation planned.
- Check for proper blade size and type.
- Do not attempt to saw stock that does not have a flat surface unless a suitable support is used.
- Use a dust mask and safety glasses when sawing.
- Use the scroll saw’s dust management system if provided.



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Scroll saw operation:

- Never reach under the table when operating or make any adjustments when it is running.
- Avoid awkward hand positions where a sudden slip could cause a hand to move into a saw blade or cutting tool. **DO NOT PLACE FINGERS OR HANDS IN PATH OF THE SAW BLADE.**
- When removing short workpieces, or cleaning up around the table, be sure the saw is in the OFF position and blade has stopped moving.
- Hold material firmly against table and feed into blade teeth at a moderate speed.
- Turn off motor if the material resists being backed out of an uncompleted cut. Use appropriate speed for applications.
- Make “relief” cuts before cutting long curves.
- Keep guards in place and working order.
- Never overfeed or force work into the blade.

WARNING: Do not allow familiarity gained from frequent use of your tools to replace following good safety practices. Always remember that a careless fraction of a second is sufficient to inflict severe injury.
