



THE CENTER
FOR THE ARTS
UNIVERSITY AT BUFFALO

SCENE SHOP SAFETY
MANUAL

May 3, 2010

University at Buffalo - Center for the Arts

College of Arts and Sciences

Scene Shop: B88

Scene Shop Supervisor: Thomas Tucker

ttucker@buffalo.edu (716) 645-0949

TABLE OF CONTENTS

POLICIES AND PROCEDURES	4
What Is Safety:	4
Shop Guests And Visitors:	4
First Aid Kits/Defibrillator:	4
Eye Protection:.....	4
Ear Protection:	4
Respiratory Protection/Dust Collection:.....	4
Required Clothing:	5
Material Safety Data Sheets:	5
Combustibles:	5
Disposal Of Materials:.....	5
Protective Gloves:.....	5
Ladder Safety:	5
Foam Cutting:.....	5
Forklift Safety:.....	6
Portable Hand Tools:.....	6
Safety Class Requirements:.....	6
Injury Causing Accidents:	6
Shop Occupancy Requirements:	6
Cleaning Of Shop Facility:	6
General Shop Hours:	7
GENERAL SAFETY RULES	8
PORTABLE ELECTRIC TOOLS	9
Portable Power Tools Safety.....	9
Electric Hand Drill Safety.....	10
Portable Circular Saw Safety.....	10
Right Angle Grinder Safety.....	11
Router Safety	11
WOODWORKING	12
Band Saw Safety.....	12
Drill Press Safety	13
Planer Safety	14
Jointer Safety	15
Table Saw Safety	16

METAL WORKING	17
Arc/Mig Welding Safety	17
Bench Grinder Safety	18
Metal Cut-Off Saws Safety	19
Oxy-Acetylene Safety	20
UTILITY KNIFE SAFETY	21
SHOP USER SAFETY AGREEMENT	22

POLICIES AND PROCEDURES

WHAT IS SAFETY:

For the purposes of this manual, safety can be described as “the minimization or elimination of injury resulting from non-deliberate acts such as accidents.” Failure to develop safe and proper attitudes, habits, and skills can very often result in accidents.

SHOP GUESTS AND VISITORS:

Any person who has completed scene shop safety training by the Scene Shop Supervisor or appropriate Theatre and Dance staff or faculty member, may accompany shop guests and visitors. He or she is responsible for that guest or visitor. In addition, guests and visitors must check in with the Scene Shop Supervisor or Theatre and Dance staff or faculty member to receive permission to enter the shop, and must wear safety glasses, appropriate clothing, and appropriate shoes. Visits to the shop should be as brief as possible.

FIRST AID KITS/DEFIBRILLATOR:

First aid kits are located by the shop exit doors and by the Scene Shop Supervisor’s office. An eye wash station is located on the wall next to the Scene Shop Supervisor’s office door. Portable eye wash stations are placed over all shop sinks. The defibrillator is located on the wall outside of the shop, next to the Drama Theatre door (at the upstage left entrance to the theatre).

EYE PROTECTION:

Eye protection must be worn at all times in the shop facilities and when tools are used in the theatres. Anyone entering the shop must put on safety glasses, which are available at both shop doors. Non-tinted prescription glasses with plastic lenses are acceptable for tasks that do not involve flying debris. Goggles and face shields are required when operating specific tools. Lens cleaner is available in the shop office. Failure to wear eye protection will result in loss of scene shop privileges:

EAR PROTECTION:

Ear plugs are required when operating louder power tools, such as the radial arm saw, table saw, circular saw, chop saw, or portable grinder at any time, or any percussive tool (pneumatic nail gun), at ALL times. Ear plugs shall be required when operating ANY power tool for extended periods of time.

RESPIRATORY PROTECTION/DUST COLLECTION:

Dust collection is required at all times when using stationary tools, and when using portable tools such as routers, sanders, and saws that produce fine dust. Dust masks are available in the shop for voluntary use. All dust can be a hazard and should be minimized at all times.

REQUIRED CLOTHING:

Anyone entering the shop is required to wear appropriate apparel. This includes making sure any loose clothing is removed or properly secured, wearing protective footwear (open-toed shoes and sandals are not permitted) and tying back long hair. Watches and jewelry should be removed.

MATERIAL SAFETY DATA SHEETS:

Anyone purchasing materials to be used in the shop is required to furnish the manufacturer's material safety data sheet (MSDS) for the product for approval by the Scene Shop Supervisor before use. MSDSs are stored in a 3-ring binder located in the Assembly shop on the wall closest to the roll up door. The Scene Shop Supervisor will ensure that the binder is kept up-to-date. Anyone using the shop is encouraged to read over the sheet(s) for the materials being used to familiarize themselves with the risks associated with the use of those materials.

COMBUSTIBLES:

Combustibles approved by the Scene Shop Supervisor are to be kept in the flammable liquids cabinet in the Assembly Shop.

DISPOSAL OF MATERIALS:

Disposal of any chemicals and paints (both water- and oil-based) needs to be arranged through the Scene Shop Supervisor for proper disposal. Building materials should be placed in the portable hopper or in cans located in the shop. Food waste and recyclables should be discarded in the appropriate receptacles located in the hallways.

PROTECTIVE GLOVES:

Protective gloves are required when working with approved solvents or solvent-based (non water-based) chemicals and materials. Extended exposure to water-based chemicals (such as paint) also requires the use of protective gloves.

LADDER SAFETY:

- Ladders are not to be stored in the scene shop area.
- Ladders must be maintained free of oil, grease, and other slipping hazards.
- Ladders cannot be loaded beyond their manufacturer's rated capacity.
- Ladders can only be used for the purposes for which they were designed.
- Ladders can be used only on stable and level surfaces
- The top or top step of a stepladder cannot be used as a step.
- Cross-bracing on the rear section of stepladders cannot be used for climbing unless designed that way.

FOAM CUTTING:

Foam cutting should only take place under direct supervision. Certain foams can produce arsenic when melted during the cutting process, and risk inhalation by the operator. Therefore, proper ventilation is mandatory and cutting should only take place in the Welding Shop with the hood vent running.

FORKLIFT SAFETY:

Students should never use the forklift for any reason. It should only be used by licensed operators, the Scene Shop Supervisor, faculty, or staff.

PORTABLE HAND TOOLS:

All portable hand tools must be returned to their designated place after use. All tools should be returned clean, with their power cords properly wrapped (folded and knotted) and facing the back of the slot. Numbered tools should be stored with their numbers visible to ensure the tool is in the appropriate place. Any broken tools should be reported to the Scene Shop Supervisor immediately.

SAFETY CLASS REQUIREMENTS:

Any student desiring shop privileges must satisfactorily complete required shop safety training and sign the Shop User Safety Agreement before being allowed access to the shop.

INJURY CAUSING ACCIDENTS:

In the event of an injury-causing accident, the following procedures must be followed:

- Notify the Scene Shop Supervisor or Theatre and Dance class instructor immediately! Shop personnel will follow the established procedures.
- A meeting must be arranged between the injured person and the Scene Shop Supervisor before shop privileges can resume. The purpose is to determine the cause of the accident for the prevention of future accidents

SHOP OCCUPANCY REQUIREMENTS:

In order to maintain a safe shop environment, strict user limits are enforced. Faculty should always schedule their shop-related projects with the Scene Shop Supervisor in advance.

The following are user limits:

0 to 20 students*: Requires one shop supervisor.

21 to 30 students*: Requires two shop supervisory personnel.

* These are only guidelines; the supervisor may restrict access at his or her discretion.

No more than 30 students are allowed in the shop at any one time. Exceptions may be scheduled with the Scene Shop Supervisor with adequate notice, provided additional supervisory personnel are available.

CLEANING OF SHOP FACILITY:

The shop facility is under the control of the Center for the Arts and is not cleaned by the University's janitorial staff. Therefore, shop users are responsible for clean-up in the shop.

Each student is personally responsible for clean up and tool return. This includes clearing dust and debris from all work surfaces and floors.

Each student is required to assist in a general clean-up of the shop at the end of each lab, or when deemed necessary by shop supervisory personnel. The Scene Shop Supervisor will do a clean-up check 10 minutes before the end of each lab period.

GENERAL SHOP HOURS:

Shop Hours of Operation:

Monday through Friday, 9:00 am to 5:00 pm*

*The shop is closed when the University is closed and classes are cancelled.

There is no unsupervised access to the shop.

GENERAL SAFETY RULES

- Students are never permitted to work alone. The Scene Shop Supervisor or an appropriate Theatre and Dance faculty or staff member must be present
- All fire doors must be free of debris at all times
- Every person must wear eye protection in the shop at all times.
- A safe attitude will protect you and others.
- All safety guards must be kept in place while operating equipment. **DO NOT REMOVE THEM!**
- Use equipment for its intended use only. If in doubt, ask for help.
- No one should use equipment until they have received proper and safe instruction and feel comfortable operating it.
- Always keep your eyes on your fingers and ears tuned to the sound of the machine.
- Make sure the machine work surface is clean, unobstructed, and ready for use.
- When finished, make sure machines are in OFF position and wait by the machine until all motion has stopped.
- Clean up any mess. Wipe up any spilled liquids. Pick up materials. Sweep up dust and debris.
- If you have made an adjustment to a piece of equipment, return it to its normal position after use.
- Students should not attempt to make repairs. Notify the Scene Shop Supervisor or Theatre and Dance faculty or staff member for help.
- Follow all special rules and regular safety procedures while using the equipment.
- Think, practice, and develop good safety habits.
- Respect the rights and property of other students.
- Horseplay, running, yelling, and/or fighting is absolutely forbidden in the shop.
- Be thoughtful and helpful to other students in the shop.
- Personal music devices are prohibited within the shop. (iPods, mp3 players, CD players, etc.)
- Avoid distractions by turning your cell phones off. Vibrate and Silent are not off!
- Many accidents occur when people are tired, rushed, ill, or under the influence of alcohol or drugs, so think SAFETY. If you are tired, stop and rest. If you are rushed, slow down. If you are taking any medication that causes drowsiness, or If you are under the influence of alcohol or drugs – **DO NOT WORK** in the shop area.

PORTABLE ELECTRIC TOOLS

PORTABLE POWER TOOLS SAFETY

Topic	Information
Damaged Power Cord	Do not use tools if the power cord is damaged. The insulation should be intact and without tears, the ground connection should be functional if the tool is designed with a ground, and the connections from plug to wire and wire to tool should be intact. Report damaged cords to the Shop Supervisor immediately.
Direction of the tool and material	Understand which way the action of the tool will push the material and the tool itself. Usually they try to go in opposite directions. Power planers push the stock away and the tool towards the operator. Belt sanders do the opposite. Right angle grinders depend on which part of the wheel you grind with. Hold the tool with a firm grip.
Ear and Eye Protection	Many portable power tools run at very high speeds and emit screeching noises during operation. Wear ear protection if the tool is noisy enough that you have to raise your voice to speak to others. Wear eye protection when using portable power tools
Path of the tool	Make sure the path of the tool is clear. Saw blades stick out of the bottom of the stock. Make sure they will not cut anything unintentionally. Make sure the cutter on your router or power planer will not hit the top of the vice. Know where the drill bit will end up when it breaks through the material you are drilling into. Whatever tool you are using make sure it will cut, drill or grind only what you want to cut, drill, or grind! Make sure the cutting part is not going to come in contact with the power cord.
Power Switch	Check that the power switch is in the OFF position before plugging in any portable power tool.
Secure your work	Large machines stay in place while the material moves. With portable machines, the tool moves and the material is supposed to stay in place – make sure that it does! Put the stock in a vice, clamp it to a work bench, or wedge it in a corner, but always keep both hands on the power tool.
Unplug the tool	Unplug the tool whenever you are changing bits, replacing blades, or adjusting something on the tool. You can easily bump the trigger unintentionally while handling the tool. Keep the plug within your sight and control so that it does not get inadvertently plugged in while you are working on the tool.



ELECTRIC HAND DRILL SAFETY

- Secure your stock before drilling. Large pieces may be stable on their own, but smaller pieces should be held in a vice. If there is any chance that the stock could catch on the bit and spin around, secure it in a vice or clamp. Any metal, regardless of size, must be clamped down.
- Center punch metals before drilling. A small dimple made with a punch will keep the bit in place
- Make sure the bit is properly sharpened, and straight and tight in the chuck.
- Keep the cord away from the drilling area.
- Large drills are powerful enough to break your arm, so make sure you have a good grip on the drill and be prepared to hold it if it 'kicks,' especially as the bit passes through the far side of a piece of metal.

PORTABLE CIRCULAR SAW SAFETY

- Position the stock so that it is stable and stationary and can be cut from a balanced and comfortable position by the operator. Smaller pieces should be secured in a vice or clamped to a bench
- Pinching the blade is probably the most common mistake made when using a portable circular saw. To prevent it, make sure the two ends fall apart when the wood falls away at the end of the cut. If the two ends fall together, they will pinch the blade and cause the saw to kick back towards you.
- Never use a portable circular saw if the blade guard is sticking. It is too easy to forget about the guard and set the saw down while the blade is spinning unprotected. If you do this, the saw will run in a circle on the floor towards you.
- Since you can't see the bottom of the blade, make sure the line of cut is clear underneath. It will cut through anything it runs into. Many people have been shocked when their saw cut its own cord, or when the sawhorse they were working on split in half.
- Let the saw reach full speed before you begin your cut. If the blade is touching the wood when you pull the trigger, the saw will kick back towards you.
- The rotation of the blade on a portable circular saw is such that, if there is a problem, the saw will jump back towards you. Keep a firm grip on the saw at all times. Keep in mind that things behind the saw blade, like feet or fingers, are in more danger than things in front of the saw—it never jumps forward!
- Because the portable circular saw is a very noisy machine, ear protection must be worn when operating it.
- Goggles are required for using the circular saw.

RIGHT ANGLE GRINDER SAFETY

<ul style="list-style-type: none">• Inspect the grinder prior to use to ensure there are no cracks in the abrasive disc.
<ul style="list-style-type: none">• Check there are no flammables in the area before grinding.
<ul style="list-style-type: none">• Secure the stock you are going to grind so that it does not move around. Unless the material is large and very steady, you should put it in a vice or clamp it to a workbench to prevent the grinder from pushing it aside.
<ul style="list-style-type: none">• Grind with moderate pressure only. Excessive pressure generates excessive heat and puts unnecessary strain on the grinding disk, the motor and the operator.
<ul style="list-style-type: none">• Grinders shoot out a stream of sparks. Be conscious of where the sparks are going and take care to avoid endangering yourself and others.
<ul style="list-style-type: none">• Any time you are grinding, things will get hot. Make it a habit to test materials for heat before you touch them.
<ul style="list-style-type: none">• Because the right angle grinder is very noisy, wear ear protection.
<ul style="list-style-type: none">• Goggles or a face shield and flame resistant clothing are required for using the angle grinder.
<ul style="list-style-type: none">• Never remove the guard.

ROUTER SAFETY

<ul style="list-style-type: none">• Unplug the router before changing the bits—you don't want to bump the switch when your hand is on the cutter!
<ul style="list-style-type: none">• Install bits with at least 5/8-inch of the shaft in the collet chuck. Any less and the bit could vibrate loose during use.
<ul style="list-style-type: none">• After you have changed the bit, make sure the switch is off before you plug in the router.
<ul style="list-style-type: none">• Unless the object you are going to route is very large and heavy, and consequently will not move around, you need to secure the stock with a vice or clamps. Never hold the stock with one hand while routing with the other.
<ul style="list-style-type: none">• When you are ready to start, make sure the bit is clear of the stock before you turn the router on. Once the router is up to speed, cut with even pressure at a steady pace. Do not force the cut or overload the router.
<ul style="list-style-type: none">• Always cut against the rotation of the bit. This gives you better control as you push the router into the cut. If you go the other way, the router will pull itself along.
<ul style="list-style-type: none">• When you have finished your cut, let the bit stop before you put the router down.
<ul style="list-style-type: none">• Because the router is a very noisy machine, ear protection must be worn during operation.
<ul style="list-style-type: none">• Goggles are required for using the router.

WOODWORKING

BAND SAW SAFETY

- Set the upper guide and blade guard so they are just above the stock. This guards the blade and helps to keep the cut straight. The upper guide should be within 1/8-inch of the wood.
- While cutting, use a push stick and keep your fingers at least two inches away from the blade at all times. You cannot cut your fingers if you do not touch the blade.
- Always feed the stock with light pressure and avoid excessive twisting of the blade. If you push too hard or twist too much, you will hear the saw slow down. Too much pressure or twisting can break the blade. Use even less pressure as you near the end of a cut.
- If you have a number of cuts to make, be sure to make relief cuts. Never back out of long, curved cuts.
- Round or irregularly shaped wood presents special dangers because the force of the blade can twist it out of your control. Never cut round or oddly shaped pieces unless you use a jig to stabilize them.
- If the machine has a brake, use it to stop the blade after the power has been switched off; otherwise stay with the machine until the blade stops moving. Recognize that a blade is sharp enough to cut even when it is not in motion.
- If the blade breaks, turn off the machine and tell the shop supervisor.
- Do not stand to the right of the band saw while someone else is using it. If the blade breaks, it might flip out in that direction.



DRILL PRESS SAFETY

- The material you intend to drill must be held in the drill vice or be clamped to the drill table. This will prevent it from spinning around and hurting you if the drill bit were to catch as it went through.
- Be sure to 'center punch' hard materials like metals before you drill them. The punch mark will prevent the drill bit from slipping around as you try to start the hole.
- Set the appropriate drill speed for the drill bit and material.
- Make sure the chuck key is out of the chuck before you start the drill.
- Make sure the bit is clear of the stock before you move it. If you move the stock when the bit is still in the hole, you could break the bit.
- Set up your operation to avoid drilling into the vice or table. Put some scrap wood under your work, or position it in the vice so that the bit will come through in the center or at the side of the vice.



PLANER SAFETY

- After set-up, ensure all guards are in place and functional before turning on the planer.
- Never plane stock that is less than twelve inches long. Short stock can get hung up between the power rollers inside the planer.
- Most planers have a shear pin that will break if the machine is overloaded. This protects more expensive machine parts from damage. Do not plane more than 1/8-in per pass.
- As with many power tools, wood can kick back out of the planer. Stand to the side so you will not get kicked if the wood shoots out. Never look into a running planer.
- Shavings can build up on the table of the planer. Never brush them off the table with your hand. If you need to clear the table, you should shut the planer off, wait for it to stop, and use a brush.
- Check your stock for staples, grit, or other foreign particles in the wood. Also look for loose knots and severe checks. Defects in the wood could damage the machine and cause kickback.
- The rollers on this machine push the wood down against the table, hard. Avoid getting your fingers pinched between the wood and the table.
- You should use a backing board when planing stock that is less than ½-in thick.
- If your wood gets stuck, disengage the clutch and turn off the planer. Do not use your hand to clear the blockage – ask the shop supervisor for assistance.
- Because the planer is a very noisy machine, wear ear protection while operating it.



JOINTER SAFETY

- After set-up, ensure that all guards are in place and functional before turning on the jointer.
- Most jointer accidents are caused by trying to joint wood that is too small—the wood flips up and back, often breaking the operator’s thumb. Never joint stock that is less than twelve inches long.
- The maximum depth of a cut when jointing on an edge is 1/8-in. Maximum depth of the cut when jointing a surface (anything wider than two inches) is 1/16-in. If you try to cut it too much, a kickback will likely occur.
- Always joint with the grain. This will give you a smoother cut and a better finish.
- Check your stock for staples, grit, or other foreign particles in the wood. Also look for loose knots and severe checks. Defects in the wood could damage the machine and cause kickback.
- Step your hands over the cutter head. If the wood were to kick out when your hand was above the cutter, your hand would drop onto the knives.
- You must use a push stick if the stock you are jointing is lower than the fence.
- Do not change the depth of the outfeed table.
- Ear protection is required for using the jointer.



TABLE SAW SAFETY

<ul style="list-style-type: none"> • Prior to use, ensure all guards, anti-kickback fingers and splitters are in place and functional.
<ul style="list-style-type: none"> • Always use the guards, splitter, and anti-kickback fingers unless you have authorization to remove them. Under special circumstances, e.g. dadoing or undercutting, guards may be removed by the shop supervisor and reinstalled immediately after.
<ul style="list-style-type: none"> • Set the blade height to clear the wood by about 3/16-in. If you set it higher, you may create a hazard. Only set it lower for special circumstances such as undercutting or partial cutting.
<ul style="list-style-type: none"> • Never cut stock that is less than twelve inches long. Small stock is dangerous because it brings your fingers closer to the blade and it can kick back more easily since it is lighter.
<ul style="list-style-type: none"> • Always use a push stick if your fingers will come within four inches of the blade.
<ul style="list-style-type: none"> • Wood can kick back out of the table saw. This is one of the most common table saw accidents. Stand to the side of the blade when rip-cutting to avoid kickback.
<ul style="list-style-type: none"> • When cutting on the table saw, always support the wood on its longest side. Use the fence when rip-cutting, and use a mitre gauge or cross-cut jig for crosscutting. Never use the fence when crosscutting—you will have an accident!
<ul style="list-style-type: none"> • Always push the stock between the blade and the fence until it has passed the back of the blade; otherwise, the wood inside the fence could easily be caught by the blade and kicked back.
<ul style="list-style-type: none"> • If you are taking stock off the back of the saw, reach around the blade, not over it. If possible, have someone help you or let the stock drop to the floor. Never reach around or over a running saw. Shut it off first.
<ul style="list-style-type: none"> • Never make free-hand cuts on the table saw. It is too easy to twist the wood or pinch the blade. Always use either the fence or the mitre gauge.
<ul style="list-style-type: none"> • The piece of wood you are cutting should always be longer than it is wide when using the rip fence.



METAL WORKING

ARC/MIG WELDING SAFETY

- Arc welding can burn or shock you. Wear protective clothing to protect exposed skin from welding splatter and UV rays. Wear leather gloves (without holes) to protect against burns and shock.
- Uses screens to protect others from flash.
- Do not weld in wet conditions or while wearing wet clothing. Water is a good conductor of electricity and could cancel out the protective qualities of your clothing and gloves.
- Always wear an approved arc welding helmet. The light from arc welding is bright enough to damage your eyes permanently. Gas welding goggles or sunglasses are not enough. Do not watch the arc when someone else is welding without also wearing a helmet, and make sure others watching you do the same.
- Goggles are required for chipping, brushing or grinding your welds.
- Ensure that cables will not interfere with your work.
- Arc welding makes a lot of smoke. Make sure you have effective ventilation to clear away the fumes.
- Make a habit of feeling, not touching, for heat before you grab anything. Vices, tools or steel near your weld can cause a serious burn even though they may not look hot.
- Vapours or fumes from solvents, fuels or other flammable liquids can be explosive. Never weld a container that has held flammables unless it has been steam cleaned or is filled with water.
- Mark hot work "HOT" or guard it so it cannot be touched.
- Make sure the area you are working in is free of sawdust before you start to weld.



BENCH GRINDER SAFETY

- Inspect the grinder prior to use to ensure there are no cracks in the abrasive disc.
- Check that there are no flammables in the area of the grinder.
- Use wheel dressing procedures to balance the wheel.
- Keep the tool rest within 1/16-in of the stone at all times. If there is too much room between the stone and the rest, your work could jam, causing the stone to shatter.
- If the stone has a flaw, it can fly apart as it speeds up, just after you start it. Always stand to the side when starting the grinder.
- Only grind on the face of the stone, never on the side.
- Work should be moved back and forth across the face of the stone to avoid creating a groove in the center.
- Use moderate pressure when grinding. If you push too hard, you will stress the machine and the stone, and generate unnecessary heat in the material you are grinding.
- Avoiding grinding small pieces or, if necessary, hold them firmly in pliers or vice grips. Small pieces could easily be pulled out of your grasp.
- Do not grind either sheet metal or soft metals like brass or aluminum on the grinder. Sheet metal vibrates too much and can easily get caught, and non-ferrous metals such as aluminum can quickly plug up the stones.
- Grinding generates a lot of heat in the metal being ground. Cool your material regularly and take care not to burn yourself when it is hot. If you are using the grinder to sharpen tools, be aware that too much heat can ruin the temper in tool steel.
- Full face shield, leather apron and ear protection are required for using the bench grinder.
- Never remove the safety shields from the grinder.



METAL CUT-OFF SAWS SAFETY

- Make sure the stock is tightly clamped in place before starting your cut. If it is not secure, the blade will grab it and roll it around.
- Keep your hands clear of the path of the blades at all times.
- Do not force the cut. Pushing on the saw can overload the machine or damage the blade.
- Take care in handling fresh cut pieces of metal – they could be sharp and hot. Cool and deburr them immediately.
- If metal chips or filings build up in the saw, turn it off and clean it with a brush – never use your hand. Metal slivers really hurt.
- Goggles are required for using the metal cut-off saw.
- Wear appropriate gloves when handling the stock.
- Make sure the saw is at full speed before starting your cut.



OXY-ACETYLENE SAFETY

- You must be trained and authorized before you are allowed to use the oxy-acetylene equipment.
- Ensure acetylene cylinders are kept upright at all times.
- Vapours or fumes from solvents, fuels or other flammable liquids can be explosive. Never weld a container that has held flammables unless it has been steam-cleaned or is filled with water or an inert gas.
- Always watch for gas leaks by listening to, or brushing the connections with soapy water.
- Open the cylinders slowly, one half-turn only at a time. This releases pressure gently into the system and lets you shut the cylinders off quickly if there is a problem at start-up.
- Always wear leather gloves and approved welding goggles. Make sure anyone who watches or helps also wears proper protective gear.
- Make sure your work area has effective local ventilation. Galvanized metal, brass or bronze emit toxic fumes when heated. Respiratory protection may also be required.
- Be aware of the location of the hoses at all times.
- Purge with acetylene. Light the acetylene first with a striker (not matches), then add oxygen. This will ensure that there is no mixed gas in the lines that could burn back up inside.
- Mark recently welded work "HOT" or guard it to prevent it from being touched.
- Make a habit of feeling for heat before you touch anything. Vices, bricks, or tools, can give a serious burn even though they may not look hot.
- The oxy-acetylene flame burns at about 54°F. Always watch where you put the tip and only set the torch down in a proper holder so it does not fall.
- When finished, turn off the torch valves, turn off the cylinder valve at the cylinder, then go back to the torch and bleed both lines.



UTILITY KNIFE SAFETY

DESIGN FUNCTION:

- For cutting material for stencils, models, etc
- Causes more accidents than any other tool you will use

SAFETY:

- Keep fingers away from the cutting edge
- Hold firmly in hand
- Carry knife with the blade facing down
- Do NOT put in pockets
- A sharp blade makes a better cut
- Dull blades cause more accidents
- Blades are cheap, accidents are expensive
- Properly dispose of blades
- Close the blade when finished

PROCESS:

1. Measure
2. Mark the line to be cut
3. Check for stability of cutting surface
4. Hold **Safe-T** ruler with 2 fingers
 - Only use a **Safe-T** ruler--don't use a flat ruler!
5. Put fingers on backside of bar, away from cutting edge
6. Cut slowly and easily

REPLACING BLADE:

1. Remove screw from casing
2. Carefully take blade out and replace
3. Replace casing and tighten screws



SHOP USER SAFETY AGREEMENT

I, _____ (printed name)
the undersigned, a student in the Department of Theater and Dance, agree to follow
all safety rules and procedures and agree to the statements below. I have:

- Successfully completed the Safety Orientation Course
- Had shop policies and procedures explained to me
- Received demonstrations on all the major machines
- Been instructed to ask for help on any machine with which I am not familiar. I will not operate any machine without such instruction
- I will be responsible for wearing eye protection at all times in the shop facilities.

Date: _____

Signed: _____

Shop Safety Instructor: _____ (Thomas Tucker)