I PERSONAL SAFETY

1. Dress suitably

2. Tuck in shirts and roll up sleeves. No dresses are allowed. Closed shoes are required, work boots are preferred. When in the metal area pants are required.

3. DO NOT WEAR loose fitting clothing or jewelry. Tie back long hair. Do not wear frayed jeans, polyester, or vinyl in welding area.

4. Safety glasses are provided and MUST be worn when operating any power equipment.

5. Dust masks are available to users in the Shop.

6. Hearing protectors are available and may be required during special operations.

7. Work gloves are available for certain operations such as handling rough lumber, sharp metals and chemicals, or performing welding operations. DO NOT WEAR GLOVES WHEN OPERATING ANY POWER EQUIPMENT.

8. Face shields and safety goggles with protective lenses must be worn when performing welding and brazing operations.

9. Welding jackets must be worn when operating welding equipment and torches. Your entire body must be covered when arc welding. Pants are required.

II FACILITY SAFETY

A cluttered workshop invites accidents, and certain materials, if allowed to accumulate, can produce potentially toxic fumes, particles, or dust.

It’s important to clean as you work. Unused tools and scraps of material create clutter on the benches. Objects collecting on the floor are potentially hazardous in that they can cause someone to stumble and possibly fall into an operating machine.

Bins are available in the shop for recycling certain materials and for disposing of waste materials.

III SAFETY WITH POWER TOOLS

Power tools are fast and precise, but they carry a potential for a serious injury if used improperly. Therefore, it is essential that power tools be handled in strict accordance with the AAP Shop guidelines and procedures. To prevent problems you will need to know each tool’s capacities and limitations before you start.

CHECKLIST FOR OPERATIONAL SAFETY

1. Know the method of your operation before you begin.

2. Check to see that your material is clean and true. Be sure you choose the correct tool and accessories to perform your operation.
3. Before you turn on the tool, be sure you are equipped with necessary supports, clamps, and jigs to stabilize your material. **MAKE SURE THEY ARE TIGHTENED AND SECURED.**


5. Never stand, or place your hand, in line with blades or moving parts of machines.

6. Do not rush a procedure.

**KEY TO OPERATIONAL SAFETY REVIEW**

- Know your operation
- Know your material
- Maintain balance
- Stabilize material
- Avoid alignment with blades and moving parts
- Avoid rushing

**IV. HAND TOOL SAFETY**

The following is a list of some hand tools commonly involved in injury, and recommended safety techniques.

**Utility Knife** — most accidents occur by breaking a cardinal rule of safety: **NEVER** align one’s hand or body with the path of the blade and/or by applying too much pressure.

Technique: Avoid alignment with the blade, use sharp blades and do multiple passes.

**Hammer** — most hammer accidents result from hammering against a springy surface.

Technique: Grip hammer firmly two thirds down the handle. Allow your wrist to do the work. Provide stable backing behind your material.

**Chisel** — most accidents occur by aligning oneself with the blade.

Technique: Always secure material and chisel away from any body part.

**Handsaw** — handsaw accidents generally occur from an improper start of a cut.

Technique: Begin your operation by drawing the handsaw backwards several times using thumb knuckle of other hand as a stabilizer against smooth side of the blade. Once a groove is established to guide the blade you can push the saw forward for proper cutting action. When using a Japanese saw, push it forward to being the cut.

**V. POWER TOOLS**

These are the power hand tools most commonly used in the shop.
Hand Drill

Technique: Select proper drill bit for your operation. Tighten the bit in the chuck and choose forward or reverse for your purposes. Be sure your material is clamped securely. Always provide backing for your material. (Do not drill into bench tops). Keep cord away from point of operation.

Saber Saw

Technique: Select proper blade for your operation. Stabilize your material. Press firmly against material you are cutting. Do not turn on the saw when it is in contact with the material and make sure the saw has come to a complete stop prior to removing it from the material. Keep hands away from point of operation.

Circular Saw

Technique: Select proper blade for your operation. Set blade depth for 1/8” to 1/4” more than thickness of your material. Utilize a guide for your operation. Do not turn on the saw when it is in contact with the material. Keep out of alignment with the path of the saw (front and back). Keep cord away from point of operation.

Belt Sander

Technique: Choose the belt you want for your operation. Make sure it is aligned properly. Keep cord away from point of operation.

VI Stationary Power Equipment

During shop seminars, and prior to student practice exercises, demonstrations of safe techniques will be provided for basic operations on this equipment. Included here are safety rules applying to each.

1. Thickness Planer
   a. Wood Only
   b. No material less than 12” long
   c. Inspect Material
   d. Set depth of cut
   e. Turn on dust collector

2. Jointer
   a. Wood only
   b. No material less than 12” long
   c. Inspect material
   d. Use a push stick for material less than 3” thick
   e. Stabilize material against the table and the guide fence
   f. Keep hands away from cutting head
3. **Chop Saw**
   - Wood products only. Operations on other materials must be pre-approved by shop techs
   - Inspect material
   - Stabilize material against backstop and table
   - Be sure the blade is free from obstruction before operating machine
   - Keep hands away from blade

4. **Table Saw**
   - Wood products only. Operations on other materials must be pre-approved by shop techs
   - Inspect material
   - Always stabilize material with rip fence or miter guide.
   - Always utilize guards when possible and make sure they are adjusted securely
   - Expose no more than 1/4" of blade through material
   - Use push sticks when ripping material less than 5" wide
   - Never apply force in line with the blade
   - Never reach around blade
   - Never perform free hand operations
   - All special operations must be approved
   - Never release material while it is in contact with the blade

5. **Band Saw**
   - Wood products only. Operations on other materials must be pre-approved by shop tech.
   - Inspect material
   - Cover unused portion of blade with blade guard (expose no more than 1/4"
   - Stabilize material against table and, if necessary, against guides
   - Keep hands away from point of operation (at least 3" away from the blade)

6. **Scroll Saw**
   - Wood products only. Operations on other materials must be pre-approved by shop tech
   - Inspect material
   - Keep hold-down resting on material
   - Keep fingers away from point of operation

7. **Drill Press**
   - For use in wood, metal, stone, masonry, glass, Plexiglas and some rubber materials
   - Inspect material
   - Be sure table is secured and locked in place
   - Select correct bit for operation
   - Select correct speed for operation
   - Always clamp your material
8. Belt/Disc Sander & Spindle Sander
   a. For wood products only. Other materials must be pre-approved by a shop tech.
   b. Inspect material
   c. Keep fingers away from pinch point of machine
   d. Sand on DOWN side of disc
   e. For small or thin materials, piggy-back material on another larger piece of wood

9. Edge Sander
   a. For wood products only. Other materials must be pre-approved by a shop tech.
   b. Inspect material
   c. Miter gauge must be locked in place and used at all times. Rest material against miter gauge.
   d. Keep fingers away from pinch point
   e. Do not round edges of material

REMEMBER:
   • STABILIZE YOUR MATERIAL
   • AVOID ALIGNMENT OF BODY WITH BLADES
   • TAKE YOUR TIME. DON’T RUSH

VII SAFETY WITH METAL WORKING MACHINES

a. Chop Saw
   a. Clamp all material
   b. Cut slowly
   c. Keep hand away from mechanisms

2. Drill Press
   a. Be sure table is secure and locked in place
   b. Select correct bit
   c. Select correct speed
   d. Clamp all material
   e. Use cutting fluid

3. Shear
   a. No steel or non-Ferris metals thicker than 16 gauge
   b. No stainless steel thicker than 18 gauge
   c. Keep hands away from clamps and cutting blade

4. Brake
   a. No material thicker than 16 gauge
   b. NEVER place hands under the bending tools.
5. **Stationary Grinder**
   a. Stabilize material on tool rest
   b. Stand to side of machine when starting
   c. Keep hands away from pinch point

6. **Angle Disc Grinder**
   a. Stabilize material
   b. Use down side of disc
   c. Keep hands away from point of operation

7. **Propane Torch**
   a. Point away from yourself and flammable material when lighting
   b. Use strikers to light
   c. Avoid fumes

8. **Oxy-Acetylene Torch**
   a. Do not adjust regulators
   b. Wear protective jacket, pants, gloves and goggles
   c. Follow proper lighting procedure (from demonstration)
   d. Point away from yourself and flammable material when lighting
   e. Turn on acetylene first. Turn off oxygen first. Always shut off lines when through with operation
   f. Avoid fumes

9. **Arc-Welders**
   a. All skin must be protected
   b. Wear protective jacket, pants, gloves and welding helmet
   c. Ground equipment
   d. Alert others when striking arc. Yell “STRIKE”
   e. Avoid fumes (turn on exhaust fan and, if possible, work below fume extractor

VII HAZARDOUS CHEMICALS

Hazardous chemicals are in many products used in the shop and in the studios. They take many forms from man-made materials and treated lumber to solvents, paints and finishes, to bleach and acids, etc. They can be extremely dangerous if used incorrectly. Potential hazards include risks of flammability, combustibility, chemical burns, and poisoning. Chemicals can be consumed, inhaled, injected or absorbed through the skin. Gloves and goggles must be worn and are available in the Rand Shop. **UNDERSTAND THE CHEMICALS YOU HANDLE. READ ALL LABELS AND FOLLOW MANUFACTURER’S DIRECTIONS.**