



MARBLEHEAD LITTLE THEATRE SAFETY GUIDELINES



SHOP PROCEDURES

1. The shop supervisor is appointed by the Technical Director or is his designee.
2. The shop supervisor responsible for the safe operation of the shop.
3. Potentially dangerous work shall ONLY be carried out under the supervision of a shop supervisor.
4. No person other than a shop supervisor or a professionally qualified shop employee may work alone in a shop or at times when a shop supervisor is unavailable to supervise the work.
5. Students and volunteers may only undertake such shop tasks that have been authorized by the supervisor or technical director. While carrying out such tasks, students and volunteers shall:
 - a. follow the direction of a shop supervisor;
 - b. observes shop safety rules;
 - c. refrain from working alone;
6. The shop supervisor shall:
 - a. maintain all shop equipment in a safe working condition and ensure that all guards and related protective devices are installed and maintained in good operating order;
 - b. supervise all work in the shop and ensure that no untrained person operates dangerous equipment or carries out any dangerous operation in a shop;
 - c. provide advice to the technical director on the need for modifications of the shop or for modifications to shop equipment or procedures that the supervisor believes are required to maintain safety;
 - d. shall provide shop safety training, as needed;
 - e. keep a record of people trained to safely operate dangerous equipment,
 - f. ensure that appropriate first aid, fire fighting and other necessary emergency equipment are available and maintained in good operating order;
 - g. ensure that all people in the shop use required personal protective equipment;
 - h. conduct periodic safety inspections of the shop;
 - i. promptly report accidents to the technical director.

TOOLS AND EQUIPMENT

1. Safety glasses (CSA approved) must be worn at all times while working with tools. Other protective equipment (ear plugs, hard hats, safety shoes, harnesses, etc.) must be worn as directed by a Shop Supervisor.
2. DO NOT WEAR gloves (other than work gloves), loose-fitting clothing, baggy sleeves, dangling jewelry or neck ties that could become entangled in machinery.
3. Only those authorized to do so by a Shop Supervisor, may work in this shop. Operation of power tools and other potentially dangerous shop work, may only be done under the supervision of a Shop Supervisor.
4. You may not use any power tool until you have been trained in safe operation techniques by a Shop Supervisor.
5. Do not remove machine guards without the Shop Supervisor's authorization.
6. Disconnect power before making adjustments to power tools. Do not service energized equipment.
7. Take appropriate steps to prevent release of dusts or noxious fumes.
8. Take appropriate fire prevention precautions when your work generates heat or sparks, or involves open flames or flammable liquids.
9. Keep shop tidy. When not in use, store tools, equipment and supplies properly. Clean-up after you complete your work

TABLE SAW SAFETY

Extreme care is needed when operating a table saw.
ACCIDENTS CAN RESULT IN VERY SERIOUS INJURY

1. You may not use the table saw until trained in safe operating techniques by a Shop Supervisor.
2. Safety glasses must be worn in the shop at all times while using a table saw. When using the table saw, **DO NOT WEAR** loose fitting clothing, baggy sleeves, dangling jewelry or neck ties that could become entangled.
3. Don't cut material that contains nails or screws, knots or other imperfections, or material that is badly warped.
4. Before cutting, disconnect the power. Select the correct blade. Ensure that:
 - the blade is secured, sharp and turns freely;
 - the throat plate, blade guard and spreader are positioned properly;
 - the table is clean and free of obstructions
 - the blade height is set 6 mm. (1/4 inch) higher than necessary to clear the stock.
 - Feed work against the direction of blade rotation.
 - Use rip fence, mitre gauge, hold downs, push sticks, anti-kick back devices and feather boards as instructed.
 - Do not cut free hand. Always use the mitre gauge or rip fence. Only use both the mitre gauge and the rip fence when they can both be positioned on the same side of the blade.
 - Feed wood with a push stick when the fence is positioned within 6 inches of the blade and when making the last 6 inches of a cut.
 - When cross cutting, remove rip fence. Do not use fence as a cut-off gauge.
 - Never reach behind or over the blade.
 - Avoid awkward positions that could lead to a sudden slip and contact with the blade.
 - Support material that extends beyond the table using table extensions or roller tables.
 - **DO NOT OPERATE THE TABLE SAW WITHOUT THE PROPER GUARDS IN PLACE**

FIRE SAFETY

1. Emergency exits should be clearly marked and accessible.
2. There should be appropriate fire extinguishers, in good condition and checked regularly.
3. There should be a working fire alarm and smoke alarm system.
4. All curtains, props, sets, and scenery should be fire resistant.
5. Costumes should be fire resistant if there is any fire effects.
6. No pyrotechnics of any kind are used.
7. Combustibles, waste materials and rubbish should be stored in approved containers or disposed of properly.
8. Oily rags, paint rags, oily waste, or similar materials subject to spontaneous combustion should be kept in approved oily waste cans and emptied daily.
9. Keep stored combustible materials away from exits and fire equipment.

GENERAL STAGE SAFETY

10. Adequate trained adult supervision must be present at all times.
11. Stage area must be inspected before each performance to identify and correct any unsafe conditions. Stage floors must be kept dry and cleared of slippery materials. Stage floors should be checked for splinters, nails, etc.
12. Keep all walkways clean and clear of debris, tools, costumes and props.
13. Backstage stairs must have handrails and be kept clear at all times. Do not store anything in backstage stairways.
14. Stairs leading up to any catwalk or elevation must have rails, and be marked.
15. Elevations should be clearly marked and safe, and be made of **secure** construction.
16. Trap doors, pits, rotating and moving sections, grooves in the floor must be adequately and appropriately marked
17. Do not enter or exit sections of the stage that are moving or rotating unless absolutely necessary.
18. Smoking, the drinking of alcoholic beverages and HORSEPLAY are strictly prohibited on stage or backstage.

ELEVATED PLATFORMS AND WORK SPACES

1. All areas and platforms elevated above 6 feet should be guarded by standard railings
 - a. Standard railings consist of a top rail, an mid rail, toe-board and posts.
 - b. Standard railings must be able to withstand 200 lbs in any direction on the top rail.
 - c. For metal pipe railing, the top rails and mid rail should be 1 1/2 inch in diameter.
 - d. If toe-boards are required, they should not exceed 3 inches and bottom clearance should not exceed 1/4 inch.
2. Guardrails are needed for wall openings that are 30" from the ground.
 - a. All guardrails should be designed for live load of 20 lbs per foot.
3. All floor openings must be guarded by a cover or guardrail on open sides. If there is only a cover, when uncovered, the opening must be attended to by worker. Hinges, handles, and all other hardware must be flush with the floor.
4. If guardrails are impractical, there should be other mechanisms for preventing falling, such as tape markings.
5. A safety harness is required whenever working on open beams that are 12'+ high.
6. People must not ride on lifting devices that aren't meant for human lifting, or on any moving devices such as tallscopes or fork lifts.
7. Platforms should be clear of all obstructions, and kept free of oils, grease or water.
8. If work is done on thrust-outs or other elevated surfaces of over 15 feet (e.g. trusses or beams), safety belts and lifelines are needed.

SCAFFOLDING AND LADDERS

SCAFFOLDING

1. OSHA has strict regulations for scaffolding (CFR 1910.29 and 1910.29)
2. Scaffolds should be erected & dismantled by experienced personnel using the proper equipment.
3. Scaffolds should be constructed to support up to 4 times the maximum intended load.
4. Scaffolds should follow the Ontario 3 to 1 rule, meaning that the maximum height of a free-standing scaffold should be 3 times the narrowest side of the base. OSHA regulations allow a 4 to 1 ratio.
5. Never erect scaffolding on top of barrels, boxes, cement blocks, or other unstable support.
6. Guardrails are required on all scaffolds over 8 feet tall. If the scaffold is less than 45 inches wide, then there must be guardrails on scaffolds over 4 feet.
7. Rolling scaffolds (towers) must have proper cross and horizontal bracing, and at least two of four casters or wheels must be swivel type with locking capability. People should not be allowed to ride on manually propelled scaffolds.
8. Equipment being ferried up and down the scaffolding must be properly secured. All equipment on top must be secured to the main framework.

LADDERS

1. Inspect all ladders before use to make sure they are in safe condition.
2. Ladders with broken or missing rungs or other defects shall not be used. Rungs should be clean of oil, grease or water. Ladders should NEVER be painted (this can hide splits and defects).
3. Do not substitute a chair, table or box etc. for a ladder.
4. The ladder feet should be placed on a secure base, and the area underneath the ladder should be kept clear of debris and dry. Do not place a ladder on a table or box to increase the height.
5. Do not "splice" ladders together to create a longer one.
6. All personnel should face the ladder while ascending and descending.
7. A step ladder should be used only in the completely open position, and only climbed on the side with the steps. **DO NOT** stand on the top step.
8. Wherever possible, use wooden or fiberglass ladders because of increased stability and their non-conducting properties.
9. Non-skid safety feet should be installed on all straight ladders before use.
10. Portable metal ladders should not be used for electrical work. Metal ladders must be marked: "CAUTION: Do Not Use Around Electrical Equipment."

11. Straight ladders should be kept on a level surface. They should be placed so that the distance from the wall or surface upon which it leans is about one quarter the length of the ladder.
12. Straight ladders should be blocked, tied off or otherwise secured when in use. Otherwise, an assistant wearing a hard hat should brace the ladders for the user. For large ladders, two assistants may be needed.
13. Tools and other objects should be secured against falling while using the ladder. **Materials should never be left on the ladder, or dropped or pitched to another worker.**
14. Tallescopes, genies, other hydraulic lift systems and other bucket ladders can only be operated if all outriggers are in place.

RIGGING

1. The operation, maintenance, and repair work on rigging equipment should be done by properly trained and qualified persons. They should be knowledgeable in operation and functioning of the equipment, safe use, routine maintenance, operation of safety devices, possible dangers during proper and improper operation, and emergency procedures.
2. All rigging equipment shall be inspected before use, after alterations, and at regular intervals.
3. All rigging materials should be properly rated and with safe load limits.
4. Counterweights should be enclosed with a guard preventing passage underneath. The guards must be secured in place.
5. Damaged or defective slings and ropes must be removed from service. Chains or ropes should not be shortened by knotting.
6. Be sure all loads do not exceed the safe capacity of the system.
7. Follow safe procedures when loading, unloading, or operating rigging systems.
8. Unbalanced counterweight systems should be kept on the ground, for example while loading and unloading.
9. Maintain visual contact with a moving piece at all times.
10. Warn people on the stage and grid before moving any rigged scenery or other object.
11. Maintain control of moving pieces at all times.
12. Only assigned personnel shall have access to suspended work areas such as grids and catwalks.
13. All hoisting systems should be secured to prevent accidental or unauthorized use.

ELECTRICAL SYSTEMS

1. All electrical work and wiring should be done in accordance with requirements of the National Electrical Code by licensed electricians. Only members of the electrical crew should make electrical connections to distribution boxes.
2. All electrical cables should use standard color coding: white - neutral; green - case or earth grounding; red, black and blue - live or hot wire; brown, yellow and orange -high voltage.
3. All electrical personnel should be aware of the load-bearing capacity of cables and boxes and not overload this capacity.
4. Cables should be routed, taped down or covered to avoid people tripping over them. Do not nailed or stapled to wood or attached to metal pipes or other metal materials.
5. Cables should not be spliced; connect only to approved terminals or connectors.
6. Check cables regularly for overheating, loose connections, fraying or other damage.
7. Extension cords used with portable electric tools should be three-wire type.
8. Worn and frayed electrical cables should not be used. Keep electric cables away from sharp corners or doors that can pinch and injure them.
9. Scenery brackets should be wired internally, and the fixture stem should reach through the back of the scenery where a bushing should be placed on the end of the stem. All fixtures should be securely fastened in place.
10. Portable stage switchboards must be supplied by outlets of sufficient voltage and ampere ratings. Portable switchboards must have a pilot light that is lit even when the master switch is opened
11. All circuits from a portable switchboard to be provided with suitable over current protection.
12. Portable switchboards shall be enclosed with substantial construction. All switches and circuit breakers should be externally operable and enclosed.
13. All AC circuits must be grounded. Maintain the integrity of all grounded circuits
14. Powered tools and electrical equipment with exposed metal parts must be grounded.
15. Temporary lights must be equipped with guards to prevent contact with the bulb.
16. Disconnect o shut off power before servicing electrical equipment.
17. Disconnect cables and instruments by pulling on the body of the connector - **DO NOT** pull on cables.
18. Don't touch bare wires.
19. Do not eat or drink around electrical equipment.

LIGHTING

1. All lights must be safely secured. All hanging instruments must have safety cables.
2. All lights and other powered equipment should be properly grounded.
3. Do not use deteriorated or poorly maintained lighting equipment fixtures, sockets, fixture wiring, etc.
4. Fixtures must be turned off and/or disconnected from the power source before being worked on.
5. Equipment repaired at the theatre should be checked for continuity and polarity before reuse.
6. All lighting fixtures or stands should be properly supported to prevent tipping.
7. Install ground fault circuit interrupters (for AC), when using powered equipment within 6 feet of the possibility of water splashing.
8. Open-faced equipment should have shielding to protect nearby personnel from flying glass in case of an exploding bulb.
9. High voltage gas discharge lamps - such as neons, HMIs, CSIs and fluorescents - should be properly grounded, inspected for lens cracks that could leak ultraviolet radiation, and otherwise handled with the care given high voltage equipment. Personnel using them should be aware of the ballasts used and ensure all micro safety devices are working. Keep people away before striking the lamp.
10. All personnel should be warned of the dangers of ultraviolet radiation from "arc" type lamps, and care taken to protect against skin and eye damage
11. Adequate backstage lighting must be maintained
12. Lasers must meet requirements set forth by the FDA's Center for Devices and Radiological Health. Only those personnel with correct laser-operation permits are allowed to operate lasers.
13. Black light output should be low in ultraviolet radiation.