

# Lyrical Opera Theater Safety Manual



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## INTRODUCTION

The very nature of theater involves some special safety hazards. Backstage crew, performers, and sometimes even the audience can be at risk. Within the theater, there is lifting of heavy scenery, and manipulation of this often large scenery, props, and lighting or special effect equipment in a very small space increase risk of accident.

The hours of work are irregular and the backstage is often very cramped, especially in older theaters. Putting on a stage performance involves several steps: preproduction (e.g., set construction, painting of set and scenery, prop-making, costume fabrication, etc.); the production itself; and the tearing down of the set after each performance. Stairs leading to the stage are often poorly lit and sometimes without rails. During preparation for performance, there is the danger of falling equipment and objects.

During the actual performance, there are also risks to the performers on the stage. These hazards include: tripping or falling on the stage; falls from elevations, or off the stage; collisions with scenery, props, or other performers; falling scenery, lights, etc. Performers are integrated into many aspects of performance operations and the constant influx of new individuals into productions creates difficulties in providing and documenting safety training.

The purpose of Lyrical Opera Theater's Safety Manual is to provide staff and performers who work or participate in the production with a general overview of potential hazards and related safe work procedures. This manual is designed to follow a theater production from planning stages to breakdown to assist you in recognizing and understanding the hazards associated with various performing arts operations and activities.

## **BASIC STAGE SAFETY:**

- Make sure that all props are safely secured.
- All elevations should be clearly marked, safe, and made of secure construction.
- Stage floors should be kept dry and cleared of slippery materials.
- The stage floors should be free of splinters, nails, or worn-out floorboards.
- Stage stairs should be free of obstacles, well-constructed, secure, railings (where able) and have adequate lighting and/or have reflective markings.
- All alleyways and walkways should be clear of litter and obstacles.
- Only those individuals trained and who have need are allowed on stage during the set-up, break-down and movement of scenery and props.

## **FIRE SAFETY:**

- Emergency exits should be clearly marked, accessible and doors unlock during theater use.
- There should be appropriate fire extinguishers, in good condition, checked regularly, and staff, volunteers, and performers should be adequate training in their use.
- There should be a working fire alarm and smoke alarm system.

## **INJURY REPORTING:**

When accidents occur, inform the Stage manager immediately who will notify Lynnette Owens if necessary so medical treatment and follow-up procedures can be initiated. In the event of a serious or life threatening injury or illness, 9-1-1 should be called immediately.

## **SAFETY TRAINING:**

1. All performers, stage hands, and volunteers are to be trained in basic performance and theater safety procedures.
2. All stage hands as well as other individuals designated to assist with stage set-up and break-down before during and after rehearsal and performance sessions are to be trained in all the specific functions they will be performing and the safety risks associated.
3. All performers are to be made aware of performance risks and trained in safety procedures to minimize or eliminate risk.

## **STAGE FLOOR AND WORKSPACES**

- If guardrails are impracticable, there should be other mechanisms for preventing falling, such as tape markings and training of all performers, staff, and volunteers.
- Stage floors and workspaces should be clear of all obstructions, and kept free of oils, grease or water.

## **LADDERS**

- Ladders should always be inspected before use to make sure they are in safe condition. Any ladders with broken or missing rungs or other defects shall not be used.
- Never substitute a chair, table or box etc. for a ladder. Never place a ladder on a table or box to increase the height.
- All personnel using a ladder should face the ladder while ascending and descending.
- The ladder feet should have non-skid surface, be placed on a secure base, and the area underneath the ladder should be kept clear of debris and dry.
- Portable metal ladders should not be used for electrical work.

## **GENERAL EQUIPMENT USE**

Employees must be trained on the proper use of equipment, including applicable safety features and required personal protection steps. While each piece of equipment has specific guidelines, the following are general safety guidelines for all equipment:

1. Follow all manufacturers' instructions on the use and care of the equipment.
2. Inspect equipment before use to check for any defects such as frayed wires or damage. Report issues to Lynnette.
3. Never carry or hoist equipment by the power cord.

## **ELECTRICAL AUDIO, VIDEO EQUIPMENT AND CABLES**

Audio and video, and lights focus the attention of the audience and set the mood for a scene. A lot of planning goes into the placement, levels and location of lights, video and sound equipment, and the same amount of care must be given to running cable. Improperly run cables can become a tangled mess that poses trip and fire hazards, can damage the cables and hinders troubleshooting to determine why lights or sound systems are not working. Failure to manage the cables can also become a distraction to the patrons in those small intimate venues where the audience can see everything. Lyrical Opera Theater uses a variety of audio and video equipment, such as mixers, speakers, computers, and projection equipment. Like lighting operations, there are significant exposures while setting-up, using and breaking-down audio and video equipment. You may be exposed to hazards such as back injuries from lifting heavy equipment, decibel level generated by the speakers and electrical shock hazards. In addition to this section, it is important to review the safe lifting guidelines.

When working with cables the following procedures apply:

- Cables should be routed, taped down or covered to avoid people stepping on and damaging them, or tripping over them causing injury. They should not be nailed, stapled, or tacked to wood or attached to metal pipes or other metal materials.
- Cables should be checked regularly for overheating, loose connections, fraying or other damage.
- Temporary lights must be equipped with guards to prevent contact with the bulb.
- Use gaff tape to secure cables.
- Use the shortest cables possible to eliminate hanging loops that can tangle or be tripped over.
- Provide sufficient slack in the cables to allow for adjustments in location of equipment.
- Group cables in parallel lines (where possible) and use Velcro rip-ties, theatrical cord, or tie line (glazed or unglazed) to keep them organized. Avoid using zip-ties, they can pose risk of cutting the cables when you have to cut off a zip-tie and there is the risk of injury from the sharp edge of a trimmed zip-tie.
- Coil extra lengths of cable, and use Velcro rip-ties or tie line to keep the coil stable.
- Use gaff tape where the cables must cross a foot-traffic area. If practical, use colored tape (yellow or orange stripes) over the gaff tape to alert cast, crew and patrons of the trip hazard.
- Use proper cable coiling techniques to prevent tangling of and damage to cable. Only individuals trained in cable coiling should perform this function.

## **NOISE LEVELS**

High noise levels generated during rehearsals and productions can result in hearing damage and hearing loss for the performers, and crew if sound levels are not properly checked and set. The following procedures should be used when testing noise levels:

- Conduct sound level testing prior to each rehearsal and performance.
- Check to make sure all levels are set low before testing to avoid high noise levels.
- Alert other cast and crew members of the test prior to perform so they can take measures to protect their ears during initial test.
- Set levels and secure to prevent changes prior to or during performances or rehearsals.

## **LIGHTS**

Performing arts lighting has many functions; it is used to see what's occurring on the stage, to focus the audience's attention on a specific person or area, or to set the tone or mood of a particular scene. Working with performing arts lighting can be a dangerous activity. Conducting operations such as hanging lights, sometimes in the dark, with high-voltage electricity has the potential to cause a variety of accidents and injuries such as

falls, fires, electrocution, and injuries from falling objects. In addition, lighting equipment is heavy and can cause significant injuries if proper lifting techniques are not used. The following procedures apply when working with lighting:

- All lighting structures are to be assembled as directed and only by individuals properly trained in the assembly procedures.
- Lighting structures should not be placed where patrons, performers, staff or volunteers can bump into, tip over or trip over, whenever possible. If impractical, to place the lighting structure elsewhere, lighting structures placed in aisle ways must be secure and clearly marked to prevent collision.
- All lights and other powered equipment should be properly grounded.
- Deteriorated or poorly maintained lighting equipment fixtures, sockets, fixture wiring, etc. should be replaced.
- All lighting fixtures should be properly secured and/or have proper support to prevent tipping.
- Make sure any sources of heat, such as very hot lights, are placed well clear of anything that could ignite, including paper, plastic, flammable furniture, and draperies.

## **PROJECTION SCREEN**

Planning is a critical component of set construction. Set designs are planned out in order to have a clear idea of the overall scope of the production. In Lyrical Opera Theater, rear screen projection is used to create the base scenery. The projection screen and support structures are expensive, fragile, and require special care to ensure safety during set up and take down and to prevent damage to the screen and equipment. The following procedures are to be used when working with projection screen and support equipment:

- Only trained individuals are authorized to work with screen and supports.
- Follow all manufacturer instructions.
- To prevent risk of tipping, rear screen weights are to be added before any other step and during breakdown are not to be removed until the screen and all support bars are taken down.
- Stage area is to be clean and clear of all sharp objects before set up of screen to prevent risk of puncture or cuts to the screen.
- Projection screen is to be placed on chairs or tables during set-up and take down to eliminate contact with dirt, dust or other particles that can damage the screen.
- Screen and supports are to be stored in their appropriate storage containers.

## **LIFTING AND MATERIAL HANDLING**

Back pain and injuries related to lifting and material handling are some of the most frequent types of injuries. Stage pieces are often awkward, heavy, or oddly shaped, which makes them difficult to lift properly. Ask yourself these questions before lifting your load:

1. Is it too large or heavy for one person to lift?

2. Do you need a partner?
3. Are there any tripping hazards on your route?
4. Will you be able to get through doorways or corridors as you are carrying the object?

Remember to wear supportive non-slip closed-toe shoes to help avoid a fall while carrying your load.

### Follow these safe lifting techniques:

1. Stand close to the load – Carrying an object as close to your body as possible will reduce the strain on your back and help maintain balance.
2. Lift with your legs – Using your leg muscles helps keep your back better aligned, which will reduce the load on your lower back.
3. Grip the load securely – Get a good handle on the load before you lift to avoid slipping. Handles or lifting straps applied to the object may help you lift it safely. If the load starts to fall, let it go.
4. Lowering the load – Make sure you keep the load close to you, and use your legs while lowering the load to the floor.

### Proper Lifting Techniques:

- Have your feet spread about shoulders-width apart.
- Your feet should be close to the object.
- Get a firm grip on the object.
- Keep your back straight and elbows close to your body.
- Keeping your back straight and head up, straighten your legs to lift object
- At the same time tighten your stomach muscles to provide back support (Don't hold your breath while doing this)
- While carrying the object DO NOT twist or bend at the waist, move your feet and legs when turning.
- Keep the load as close to your body as possible
- To set the object down, use the same technique used to lift the object



## **Lifting Unbalanced loads**

- Make sure the weight is balanced and packed so it won't move around.
- If the load can't be balanced be sure the heavier side is to the body when lifting to prevent being thrown off balance.

## **Loads overhead or away from the body:**

- Get as close as you can to the load. Slide the load towards you if you can.
- Don't arch your back--avoid reaching out for an object.
- Do the work with your legs and your arms--not your back.

## **HOUSEKEEPING**

Work areas can become congested while set building and rehearsals take place. Clutter can contribute to slip and fall injuries. Remember to clean up as you perform tasks and after each rehearsal and performance. Place trash in proper receptacles.

## **PROPS**

All productions call for props, many include special props, such as non-stationary walls, doors or chairs, toy guns, knives, lanterns, glass and plastic props like bottles, glasses, dishes, candles and holders, tables, desks and benches. These props pose unique risks that require special handling procedures to ensure the safety of performers, crew, and audience. When dealing with props:

1. Only individuals and crew members who have been trained in set-up and performers who will be handling the props should be working with them.
2. Treat them with proper care and maintenance.
3. Inspect them for damage before use and after use. All needed repairs should be reported to Lynnette.
4. Performers should work with the prop prior to performance to become familiar and comfortable with the props.

## **CHANGES IN ELEVATION**

Changes in elevation (stairs, ladders, edge of stage, etc.) pose trip/fall hazards. To reduce the risks of trip/fall incidents:

1. Mark changes in elevation, including the edge of the stage, with phosphorescent tape or LED lights as appropriate.
2. Inspect ladders and stairs for stability prior to each performance and rehearsal.
3. Temporary fall protection measures (such as a monitor) may be required during rehearsals around elevated stage platforms, props or at the leading edges of the stage.

## **Fire Extinguishers, Fire Alarm Pull Stations, and Fire Hose Stations:**

- Ensure all fire extinguishers are in place and intact (the seal has not been broken).

- Ensure all fire extinguisher “charge indicator gauges” are in the green zone of the gauge.
- Ensure access to the fire extinguishers, fire alarm pull stations, and fire hose stations, is unobstructed and un-obscured.

## **Facility Conditions**

The facilities must be checked for cleanliness and the absence of slip, trip, and fall hazards:

- Ensure entry rugs are level and do not pose trip/fall hazards.

## **In an Emergency**

Front of the House staff will go to the stage and provide information regarding the nature of the emergency and instruct the audience as to expected actions; i.e., evacuate, shelter in place, etc. The Stage Manager is generally responsible for evacuating the back of the house.

## **Fire Emergencies**

Immediately notify campus safety by dialing 9-1-1. Report the exact location of the fire.

- Activate the fire alarm.
- Evacuate the building.
- Close doors after each area/room is evacuated.
- An attempt may be made to extinguish a fire ONLY if:
  - You have been trained in the proper use of a fire extinguisher.
  - It is a small incipient fire involving simple combustibles, such as wood or paper. Never attempt to extinguish hazardous materials, electronics, or equipment.
  - The fire is extinguished within 10 seconds; after that you must evacuate the building.

## **Power Outage Emergencies**

Trip and fall incidents increase in a power outage due to people trying to move around in the dark.

- Proceed with care to an area lit with emergency lighting if the emergency generator does not activate after five minutes.
- Use your cell phone as a light source if you do not have access to a flashlight.

## **Medical Emergencies**

Immediately provide first aid for minor injuries using universal precautions to reduce the risk of transmitting bloodborne pathogens. Universal precautions include:

- Allow the injured person to clean, bandage, and/or apply pressure to wounds if he or she is able.
- Wear latex gloves.

- Wear safety a CPR mask when administering CPR.
- Wash your hands with soap and water after removing the gloves.
- Summon emergency medical services by dialing 9-1-1 for serious injuries. Examples of serious injuries include:
  - Head injuries
  - Unconsciousness
  - Heart attack or symptoms of heart attack
  - Stoke
  - Deep wounds
  - Not breathing
  - Broken bones
- Notify the person in charge immediately for injuries and illnesses that are not minor. Post personnel along the route from the building entry to the injured person to assist the prompt arrival of emergency medical personnel.
- Begin the gathering of information for the investigation as soon as the injured or ill person's medical needs are met.
- Report the incident to Lynnette Owens.

## **Heat Illness**

Heat-related illness is most often associated with outdoor venues; however, it is important to remember heat-related illnesses can also occur while working indoors when air conditioning is not available. Performers may be susceptible to heat-related illnesses as a result of wearing heavy costumes and/or exerting physical efforts under the stage lights. Heat illness is a serious medical condition resulting from the body's inability to cope with a particular heat load and includes sunburn, heat rash, heat cramps, heat syncope (fainting and dizziness), heat exhaustion, and life-threatening heat stroke.

## **Protect Yourself**

Pre-hydrate and stay hydrated. Women: drink at least 9 eight-ounce glasses of water on a daily basis. Men: drink at least 12 eight-ounce glasses of water on a daily basis. It takes about three days to hydrate your body; so it is important to maintain the habit of drinking the minimum amount of water every day.

- Try to drink 4 or more oz. of water every hour.
- Avoid caffeinated beverages that de-hydrate the body, such as coffee, tea, colas, and energy drinks. As well as alcohol as it dehydrates the body.
- Eat lighter meals when working in hot conditions.
- Pace yourself if you are not accustomed to working in warm or hot environments. Start work slowly and pick up the pace gradually.
- Seek shade and/or a cool area to rest if you begin experiencing symptoms such as dizziness, headache, weakness, fatigue.
- Loosen or remove heavy costumes whenever they are not needed.
- Immediately report any heat illness symptoms to Lynnette.

- Summon emergency medical assistance when necessary. While waiting move the person to a cool shady area, loosen or remove heavy clothing, provide cool drinking water, and fan the person.