

CHAPTER FOUR


A RISKY BUSINESS

When it comes to theatrical lighting and sound, there's a lot of attention to safety. Why? Well, all that cabling gives you one clue: electricity. Then there are the ladders to climb, since most of the lights and some of the speakers need to be hung. Larger theaters may have a lift, scaffold, or **catwalk**. Safety in the theater requires awareness, common sense, and diligence to eliminate hazards and guard against carelessness.

All theaters are obligated to provide a safe and healthy environment for the actors and crews; if you head up lighting or sound, you'll be responsible for the safety of your crew.

There are recommended practices and safety precautions when working with each of the following:

- Electrical wiring and equipment
- Ladders, lifts, scaffolds, catwalks
- Tools
- Instruments (which get hot)
- Pyrotechnics



The lighting crew at this TV studio needs to use many safety precautions as they work with hot instruments, live wires, and ladders.

- Fog
- Chemicals
- Machinery

Your school or community theater probably has the following basic rules: Submit a parental permission form before you start any technical theater work; learn if there are any tools that you either may not use or may only use if trained, certified, or supervised.

Of Shocking Importance

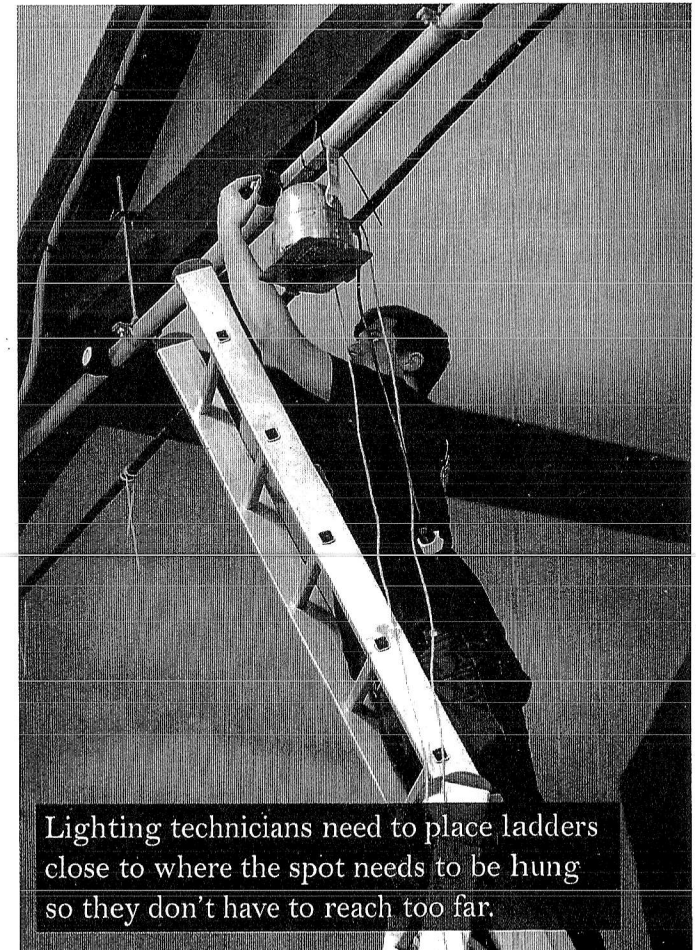
Let's take a closer look at one of these areas: electrical safety.

Performing arts lighting uses a lot of electricity, so there are risks. Do not ignore even a slight tingle when you feel this sensation while handling a lighting instrument, cord, or component of the equipment. This tingle is an indication that something is wrong; you may be at risk of exposure to a more significant electrical shock. Electrical shock happens when a part of your body completes a circuit between conductors or a grounding source. The effects of electrical shock range from a tingle to death, depending on the amount of current flow and the path of the current through your body.

A basic rule is to be sure that you physically disconnect a fixture before you change the lamp or open the fixture for any reason. That means taking the time to disconnect it *even* if the show is ready to start. There are no shortcuts for safety!

Another important rule applies any time you are focusing or otherwise working with a lighting fixture that is not at zero percent intensity. You'll need to ask someone else to be at the console—or at a remote focus unit—ready to kill the power to the unit in case of emergency. In general, you'll need to know when to have a spotter for stage work.

When you're ready to take on more responsibility, you'll also be making sure that all equipment is properly grounded and that none of the cables,



Lighting technicians need to place ladders close to where the spot needs to be hung so they don't have to reach too far.

circuits, dimmers, or adaptors are overloaded. This includes making sure you don't use lamps with higher wattage than what a fixture is made to handle.

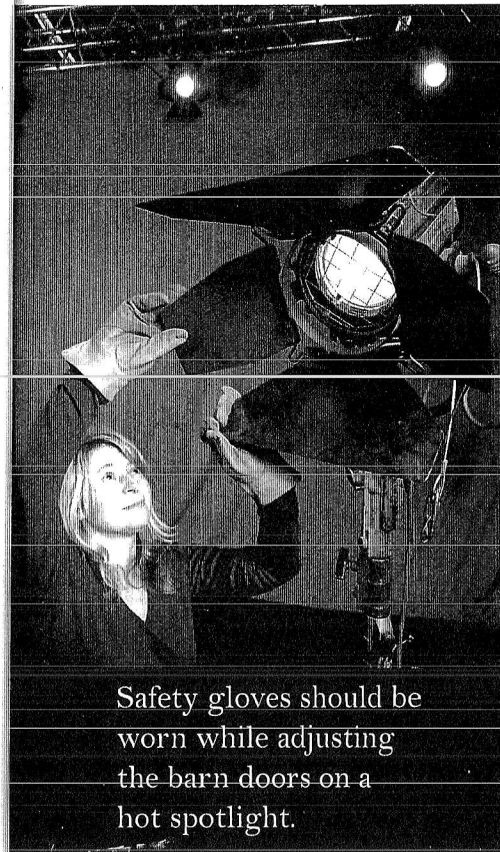
Safety also applies to hanging fixtures onto pipes. Securely attach fixtures with c-clamps and pipe bolts, and add safety cables to each fixture you hang. You can see a great demonstration of this at a theatrical Tech Challenge event, listed as a video in For More Information: *Tech Challenge Event*.

Any follow spot operators need to be thoroughly trained in how to operate this instrument safely. For example, operators should know what to do if the gel in the gel frame begins to smoke. Also, they'll want to wear gloves that can protect their hands from the heat.

While some of these rules apply more to lighting, safe practices for running cables apply to both lighting and sound. Improperly run cables can become a tangled mess that poses trip and fire hazards and hinders troubleshooting to determine why a light or speaker is not working. You'll want to avoid running cables across walkways because they pose a trip hazard, even when taped down. Also, people tromping on cables can damage them, causing short circuits or broken connections.

Be Cool

Fire safety is another big issue that you need to think about. For starters, you'll want to know where the fire extinguishers are kept. Find them before there is a fire onstage! Check that they're not overdue for inspection, and be sure you know how to use them correctly.



Safety gloves should be worn while adjusting the barn doors on a hot spotlight.

The theater probably has a fire curtain as well as flame-retardant curtains. The fire curtain hangs between the stage and the audience. It's there to protect the audience in case a fire should start onstage.

Performing arts lighting equipment also poses fire risks. The fixtures may burn hot, and the lenses used in the lights can magnify the heat. Make sure you use only approved equipment to modify your lights; using unauthorized materials to rig lighting colors or change the shape of the light is

a potential fire hazard. Very hot lights should be placed far enough away from anything that could ignite, including paper, plastic, flammable furniture, and draperies. (Remember: flame-retardant does not mean flameproof.)

Watch Your Step

Rigging equipment often means climbing ladders. When rigging, there may be many other students around, working on the scenery or otherwise creating distractions, so it's important to be mindful and follow

safety practices. Here are just a few things to help you work safely with ladders:

- Always have someone steadying the ladder while you are working on it.
- Always use both hands to climb the ladder.
- Don't use a ladder that looks damaged or unstable. It may be tempting to use it "just this once," but don't do it.
- All tools carried to the top of a ladder should be tethered to your body using an electrician's belt or straps.
- Never leave anything unsecured on the top of a ladder, even briefly. Imagine what would happen if you were to leave something, even gels or gobos, and someone moves the ladder. The item could fall and really hurt somebody.
- Baggy pants can snag and cause you to fall, so wear clothing that won't get in your way.

The set crew—all those working on creating and moving the sets—also needs to be aware of and practice good safety procedures. For some tasks, personal protective equipment (PPE) will be required. This includes safety glasses, work shoes, hearing protection, respirators, dust masks, arm protection, cotton or leather gloves, hard hats, and bump caps. Your training will likely prepare you to know when to use these types of equipment.

Fancy Footwork Saves the Show

A teenager was part of the stage crew for a touring production of the musical comedy *How to Succeed in Business Without Really Trying*. For this production, the stage crew wore costumes, since they would be moving sets and props on and off stage in half-light.

The cast was working with handheld wireless mics to amplify just their songs; they delivered their speaking parts without amplification. (These handheld mics look like "normal" wired mics but tend to have a bigger body because they include the transmitter and battery pack.)

The mics were to be left on the set for the actors to pick up when they needed to sing. At least, that was how things were supposed to happen.

As you might expect, during one performance, one of the mics was taken offstage during a set change. Realizing the problem before the actors did, this quick-thinking teen grabbed the mic and headed for the revolving door that served as one of the stage entrances. Luckily, this door happened to be close to where the song would be performed.

He spun the door, twirled out onto the stage, handed the mic to the leading man—just as he realized the mic was missing—and carried on, spinning right back into the revolving door to get back offstage.

The audience broke into the biggest applause of the night.

Lesson: Everyone always needs to be "on," not just the actors.

Another area of responsibility is the care of the equipment. Some groups, like community theaters, prefer to rent their lighting and sound equipment since much of it is easily damaged and expensive to replace. You'll earn a lot of appreciation if you do your best to exercise care and caution whenever you handle the equipment or when you train others. If you're working with young children wearing wireless mics, for example, encourage them to take care of their battery packs, so they don't accidentally break the connectors.

Backstage Etiquette

Let's turn from how to keep yourself physically safe to how to protect your relationships. Your connections with all the people involved in the production are affected by how well you practice good theater etiquette. Etiquette—the habits that make it pleasant to be around someone—applies to everyone in theater, from the tech crew to the actors to the audience.

Want to know if the actors and production crew have it together? Watch a tech rehearsal. These rehearsals are often long and exhausting. During tech rehearsals, the tech crew will need time to fine-tune cues and equipment. The most helpful thing actors can do is to pay attention, stay quiet, and be ready to jump from scene to scene. Considerate actors appreciate that the tech crew works crazy hard to make the cast look and sound great.

Theater is a place full of drama. And you know we're not just talking about the script. Emotions run high. Some students are feeling giddy; others are

nervous or even scared. This is a great time to think positively. It's also really helpful to avoid gossiping. Everyone has lots of opportunities to make mistakes; talking about them helps no one. Save the drama for the show.

During the rehearsal process or even during performances, it may be tempting to help an actor by giving him or her some tips on how to do a better job. Don't do it. Don't even *think* about doing it. Cast members only want to hear from the director or the stage manager. Although you want to be helpful, it can be confusing if someone gets suggestions from several different people. And the actor might feel you're being rude or questioning his or her acting ability. Besides, your area of expertise is the technical, not the performing aspects of theater.

At the end of a rehearsal, the director gathers everyone and gives notes. Be sure you have something handy for writing your notes. While the notes can be corrections or changes you need to make—and you might really not want to hear them—be upbeat and just say “thank you.” It's helpful to remember that everybody gets notes after rehearsals. Even your favorite actor gets notes from the director. If you disagree or don't understand the note, discuss it with the director privately, never in front of the rest of the crew or cast.

For performances, special rules apply:

- Once the house is open, everyone should be backstage or out of sight. This not only applies to the actors in costume but also to the crew.

- Shhhh. If you're working backstage, it's easy to forget how your voice can carry. The only people on the production crew who should be talking are the stage manager and assistant stage manager.
- Put away your cell phone—after you silence it, of course! No texting, tweeting, or taking selfies until after the rehearsal or show. The show deserves all of your attention.
- If you're working backstage, avoid bumping into scenery, backdrops, and the prop table. Not only can your movement be distracting to the audience, but things can break.
- Never move a prop. They are set in specific places, so they can be found in the dim backstage lighting.

Say you were running a spot and your part is over. It's tempting to hang out in the wings to watch the show. Don't, because backstage areas can be tight, and the rest of the crew and the actors need to get around. Also, you don't want to cause a traffic jam as sets are being moved on and off stage.

After a show, you may be collecting mics and other equipment from the actors; they may welcome hearing that they did a great job.

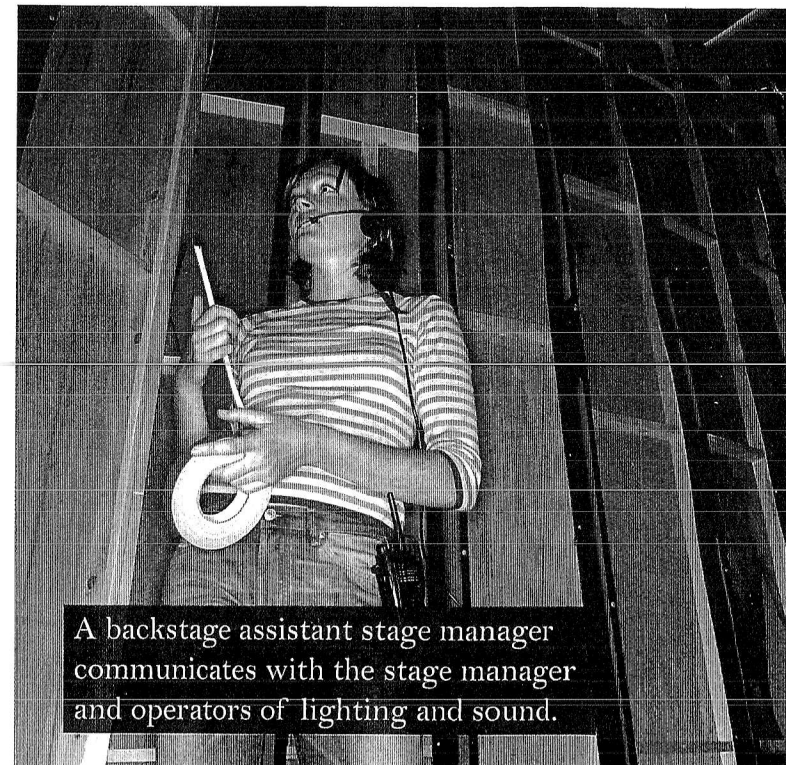
Headset Etiquette

There could be four or more people on headsets during shows: the stage manager, one or more assistant stage managers, the light board operator, the

32

sound board operator, and any follow spot operators. The stage manager may lay down some ground rules regarding what is and is not permissible to say on the headsets. That's because some things can get said that are upsetting to the cast or crew; it's been known to happen. And there's the risk that talking inappropriately over the communication system could "stuff up a cue" (make it inaudible). Credit goes to you if you already know the following "good manners":

- The stage manager rules the headset. Follow his or her lead.
- Make testing your headset a part of your preshow checklist.



A backstage assistant stage manager communicates with the stage manager and operators of lighting and sound.

- Keep your mic off unless speaking (except for the stage manager).
- Keep chatter to a minimum.
- Don't cough, sneeze, or yawn with the mic open.
- When your mic is on, don't move or remove your headset.
- Warn everyone on the channel before plugging or unplugging your headset or belt pack.
- Never discuss anything on the headset you wouldn't discuss in person, center stage, or in front of the audience.

Be Someone You'd Like to Work With

Theater safety and etiquette include many things you should avoid doing. There are also things you can and should do in order to be welcomed into any tech crew and appreciated by both directors and stage managers:

- Arrive earlier than your call, so you are ready to work at the call time.
- You can't say too many words of encouragement or praise.
- Keep things neat and clean, even if it's not your mess.

(33)

- Stay focused on the show.
- When you have finished a task, ask what you can do next—don't wait to be told.
- Offer to help others. "Ask not what your stage manager can do for you. Ask what *you* can do for your stage manager."
- Warn others of hazards like hot lights.
- Give others a "heads up" signal when moving overhead rigging.
- When learning something new, aim to learn it so well that you can teach it to the next techie.
- Take great notes after rehearsals and performances.
- Help the actors by not talking with them when they are "in character" as it will break their concentration.
- Watch over the equipment—whether owned or rented—and help others have respect for costly, vital equipment that's often fragile.
- Try to think of things not as "problems" but as "challenges." Put on your positive pants.

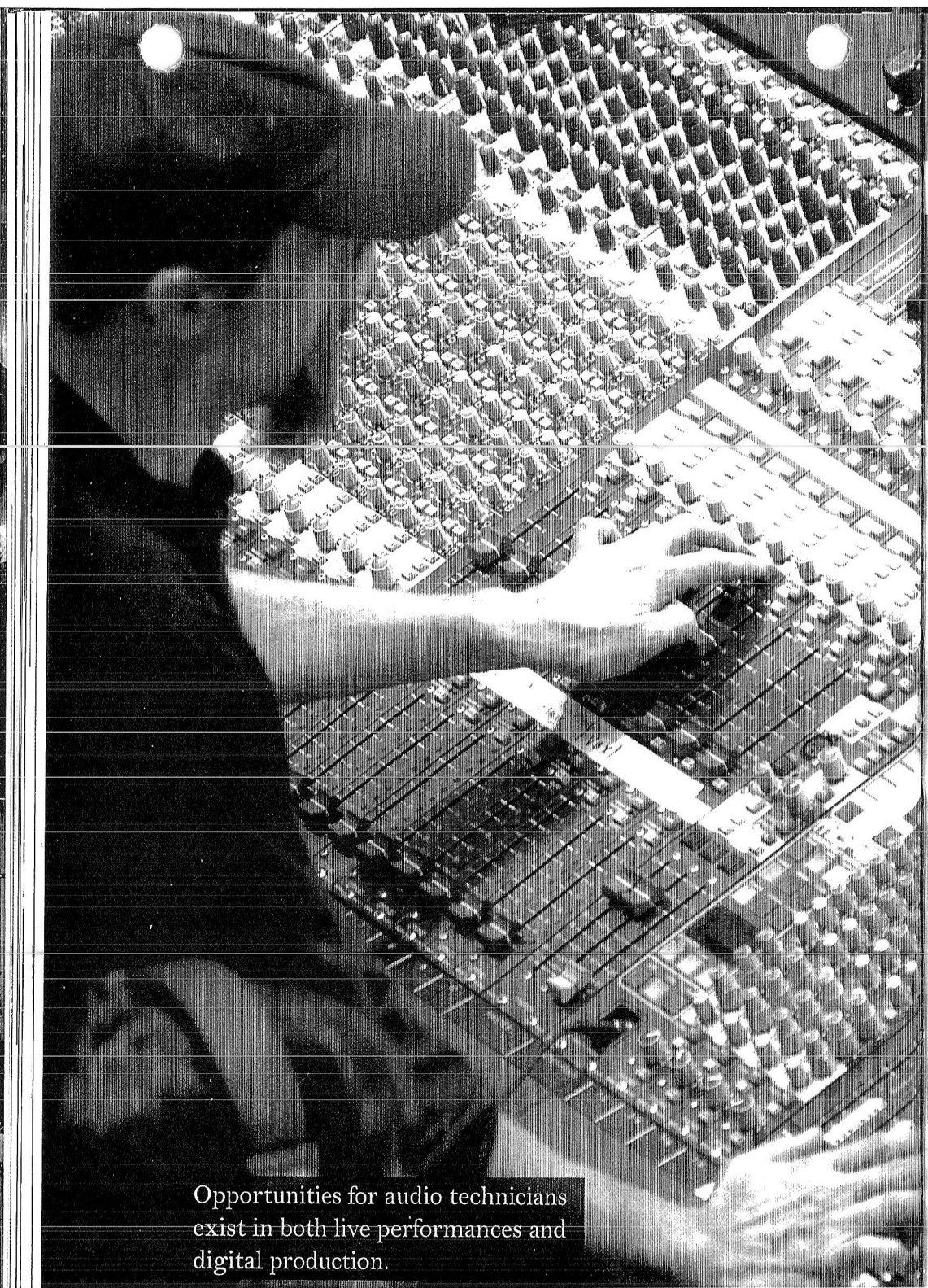
THE NEXT ACT

If your experience designing lighting or sound for student productions has got you thinking about “next steps,” you might consider undergraduate and graduate programs in drama and theater arts. These programs will give you the opportunity to explore the broader field of theater design and technology, or the narrower fields of lighting or sound design.

Making a living in professional theater as a lighting or sound specialist is not impossible. It’s also not easy. Professional theatrical lighting and sound designers usually need to have an additional source of income—outside of the theater—to supplement what they earn from working *in* theater. Later in this chapter, we’ll explore some of the diverse career paths followed by graduates with a background in theater lighting or sound.

SFX: Opportunity Knocks

If your interest is in sound, you may want to deepen your understanding of audio production and recording. Many people with jobs in this field have an associate’s degree, which is obtainable at junior or



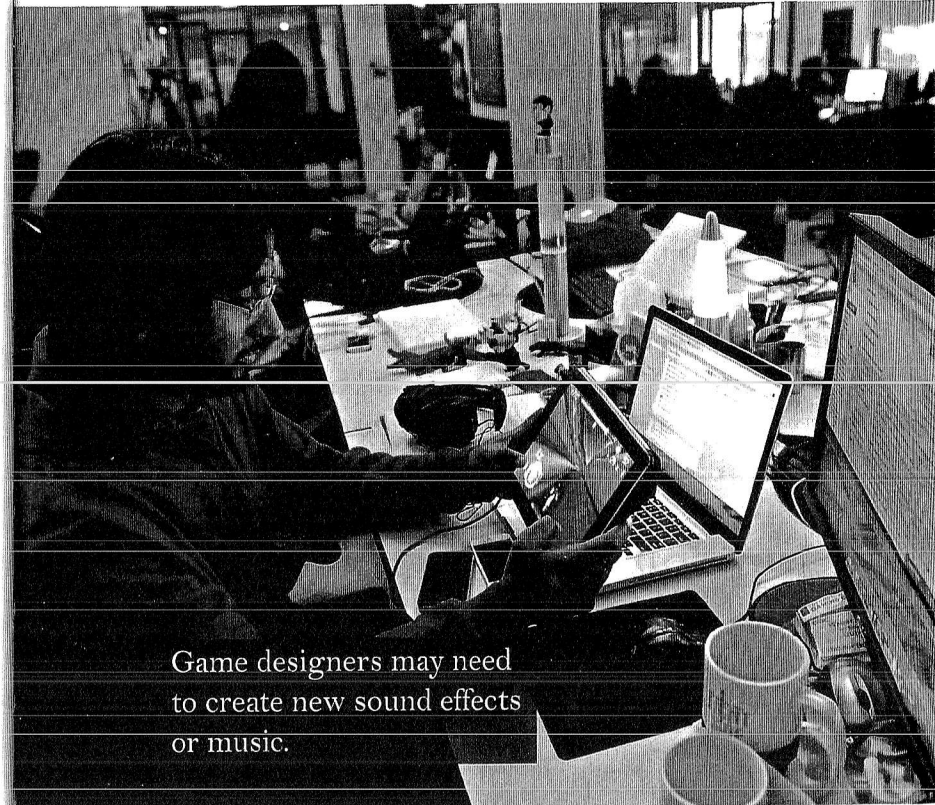
Opportunities for audio technicians exist in both live performances and digital production.

community colleges as well as technical or vocational schools. These schools introduce students to the major concepts and teach them how to use the various equipment found on the job. If you're aiming higher and want to work in a first-rate recording studio, a film production company, or maybe an animation studio, you'll want to go for a bachelor's or master's degree to boost your credibility.

Course work at a college, university, or technical school will give you hands on experience in audio recording for film and video, as well as for the latest forms of media, like computer animation, video games, computer apps, and internet websites. You can also study the art of creating sounds the way Foley artists do, composing soundtracks, producing multitrack recordings, and recording on location—at an outdoor music concert, for instance.

Here's a sample of career opportunities in the field of audio production:

- Production mixer
- Sound editor
- Game audio designer
- Dialogue editor
- Music editor
- Foley mixer and ADR (automated dialog replacement, or “dubbing”)
- Live theater sound designer, engineer, and mixer
- Audio editor for audiobooks



Game designers may need to create new sound effects or music.

Interested in gaming? Your sound experience in theater is a good fit. You can appreciate how well theatrical sound design prepares you for a career in game design when you think about some of the qualities of successful game designers. These qualities include:

- Awareness of audience. Check. You've been thinking about the audience and how you can enhance their experience through sound.
- Efficient. Check. You get things done on time, or ahead of time; you know how to set priorities.

- Creative. Check. After all, wasn't it you who came up with using those great atmospherics from YouTube?

To meet an audio engineer who got a degree in sound design, check out Todd Beyer at Fader King Studios. On his website (see For More Information for the link), you can hear samples of his work as he talks about composing music, reproducing and recording everyday (Foley) sound effects, and doing postproduction audio for movies, TV commercials, and more.

Lighting Your Way

If you've done lighting design for student or community theater, you might decide to pursue a career in this field. As in sound, there is a range of opportunities. For example, lighting designers are responsible for creating the lighting for all sorts of performances, including music concerts (everything from rock to classical), television broadcasts, spectacles like the Olympic Games, musical theater, dance concerts, and even fashion shows and operas.

Another field where lighting plays a key role is architectural lighting. With a background in theater, qualified designers are hired to create the lighting scheme for corporate offices, restaurants, nightclubs, and museum exhibitions, among other types of public spaces. There are colleges and universities around the globe that offer degrees in this field. The International Association of Lighting Designers

(IALD) strongly believes in the "power of light" to enhance human life. The organization awards scholarships and travel stipends to students interested in the architectural lighting design profession.

From Stage to Real World

Even if you are not drawn to a career in lighting or sound, your experience in these areas will help you develop valuable qualities and highly marketable skills, the kind that employers (and colleges) are looking for in applicants. Here's a recent list of the top ten qualities employers value:

1. Communication skills
2. Honesty
3. Technical competency
4. Work ethic
5. Flexibility
6. Determination and persistence
7. Ability to work in harmony with coworkers
8. Willingness to keep learning
9. Problem-solving skills
10. Loyalty

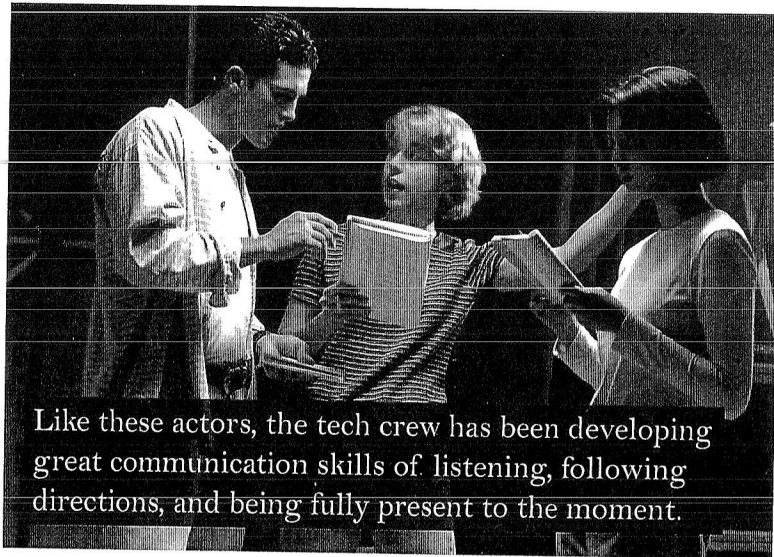
Coming up: a closer look at some of these qualities and their application to careers outside of theater.

Communication Skills

Good communication skills aren't just about speaking well, and with ease. They also involve the ability to listen well, follow directions, and provide useful feedback. Listening well is something in which techies excel. The stage manager, speaking through your headset, wants to give you directions once—not twice.

Plus, listening well requires the ability to focus and stay present. Every tech rehearsal and every performance has required you to be as focused as a cat watching a mouse or a batter waiting for the pitch. With your headset on and your hands poised at the controls or on a follow spot, you are 100 percent listening for your next cue.

Business journals reporting on the job market agree that the ability to communicate clearly and effectively is one of the most important skills for a young person entering the workforce. Of course, just about every job under the sun requires communication



Like these actors, the tech crew has been developing great communication skills of listening, following directions, and being fully present to the moment.

37

skills. If you're unsure about how your own skills match up with employment opportunities, it might be time to determine which form of communication you feel most comfortable with.

Oral communication, as its name implies, is about speaking. If you enjoy sharing ideas, having face-to-face conversations (as opposed to tweeting or texting), giving feedback, or maybe explaining how something is done (adjusting sound levels, for example, or replacing gels on an instrument), then the following career options might be worth considering: customer service representative, sales person, public relations manager, or broadcast journalist for TV or radio news. Remember: these are only a small sample of the many occupations in which good oral communication is a must-have skill.

Suppose you're more comfortable in front of a monitor and would rather share your views and opinions via an online blog. If that's the case, then working in social media might be your ticket to a successful future. Companies with an online presence need people to monitor their various social media, like Facebook, Instagram, YouTube, and Twitter feeds. You'll need to keep track of how many "hits" these sites are getting and what users are saying about the company. And you may have to come up with an appropriate response.

If the written word happens to be your strong suit, you could put your writing skills to good use by working as a copywriter for an advertising agency. In that capacity, your job would include writing copy for radio/TV ads, videos, websites, brochures, and other materials to promote a company's services or

products. You could also work as a blogger either on your own or for organizations with their own blog.

Work Ethic

Getting to work on time, doing what you are hired to do, meeting targets and deadlines, and working to the best of your ability—that's what it means to have a good work ethic. Doing tech work is a great way to develop your work ethic. Why? For starters, because so much depends on you doing your job to the best of your ability and with an awareness of the needs and demands of your fellow crew members as well as the performers.

You've had to prepare your light or sound plot on time, so the appropriate equipment can be obtained and set up. You arrive at rehearsals not only on time but before the cast does, so you can make sure that everything is going to function according to plan. And you always leave the theater after the actors because you need to stay behind and check your equipment, clean it, and maybe repair anything broken. You've also had to meet your deadline for every performance because the curtain can't go up until you're ready with the lights or sound. When it comes to writing your college admission essay or interviewing for a job, be sure to emphasize all the ways in which you have demonstrated a consistent work ethic.

Working in Harmony with Others

Employers value people who are both likeable and easy to get along with. As part of a tech crew,

38
you've learned that you can work well with all kinds of people, some of whom may be quite different from yourself.

But you're not only working with different personality types; you're also "wearing different hats." In other words, you're performing a variety of roles. As a novice techie, you've had to learn from someone more skilled than you how to do what you do. The reverse is also true: you've possibly trained others in the correct use of the sound or lighting equipment. As an underling, or subordinate, you've had to take direction from the director and the stage manager. As an equal among equals, you've collaborated with your peers in set design and costumes, both making requests and responding to their needs and deadlines. All of these relationships have been opportunities to practice respect, dependability, and hopefully, a sense of humor. Together, these qualities will enable you to perform as a valuable team player.

When asked about what careers his tech students pursue after graduation, one high school teacher of theatrical sound and design answered, "Brain surgery, real estate development—you name it." He went on to explain that members of the tech crew get terrific experience in working as part of a team, which is invaluable in many professions. "When that surgeon is operating, he depends on being handed the right instrument at the exact moment he needs it. He doesn't even need to make eye contact. That's the sort of synchronized work experience they are getting in theatrical tech. These kids learn skills that transcend theater by mega orders of magnitude."

Willingness to Keep Learning

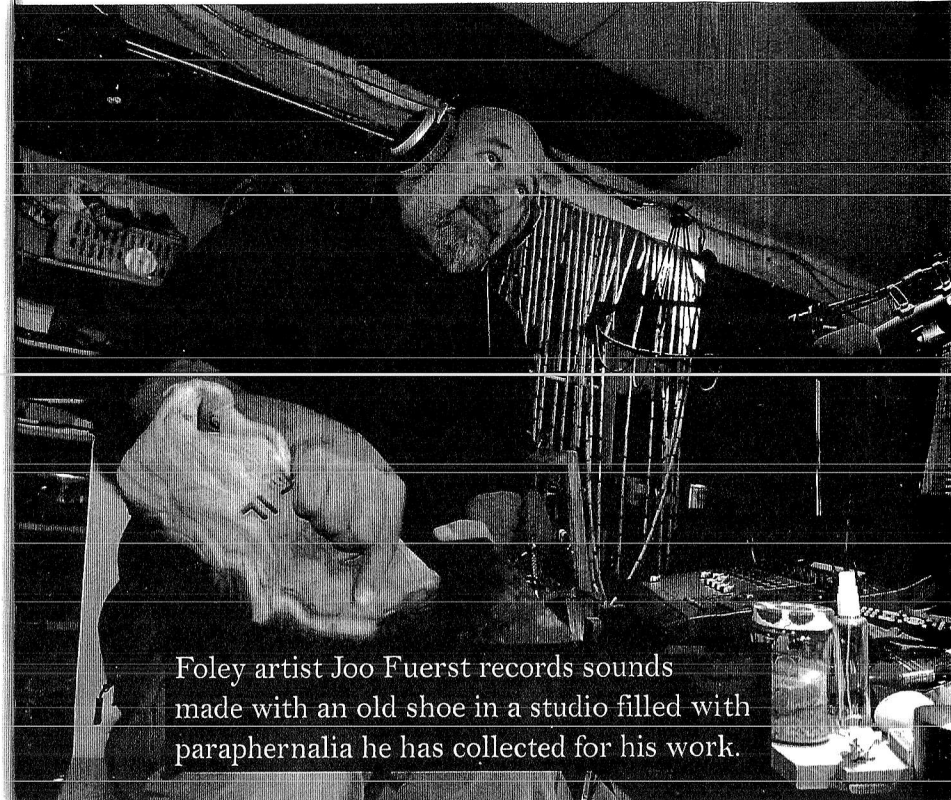
Every new theatrical production brings its own set of challenges, obstacles, and problems. For lighting and sound techies, meeting the challenges, overcoming the obstacles, and solving the problems require a willingness to keep learning and to stay open to new ideas and new ways to do their job. Learning how to “translate” a theater director’s vision into creative lighting and sound designs is an integral part of this work.

The willingness to keep learning is one of the core strengths that theater techies possess. They are magnets for information. Any new instrument or control board grabs their attention like a delivery driver showing up at the theater with a stack of fresh pizzas for cast and crew. Since technical theater is a field that is technology-driven, there’s a steady supply of new equipment and new apps to learn about.

Problem-Solving Skills

Techies carry a great deal of responsibility on their shoulders. Beyond handling the technical aspects of their job, they use their knowledge and expertise to help the playwright, the director, and the other designers achieve their unique objectives. This is not an easy task. For the tech crew, this involves meticulous attention to every detail of the production and the ability to solve problems as they arise.

Back in the mid-1980s, Kent Dorsey, an up-and-coming lighting designer at the Old Globe Theater in San Diego, California, faced a daunting challenge: create the lighting scheme for a play with twenty-



Foley artist Joo Fuerst records sounds made with an old shoe in a studio filled with paraphernalia he has collected for his work.

one different settings, including a Himalayan ice field, a desert, a Cuban nightclub, a jungle, and a swamp—on a small, square stage with various set pieces suspended above the stage. Dorsey eagerly accepted the challenge. To achieve his goal, he aimed and focused 170 lights among the overhead set pieces, along with an array of tiny mirrors and transparent color gels. Crisp blue gels evoked the ice fields; green gels with a dappled shadow pattern suggested the jungle setting. The creative use of sound, combined with Dorsey’s lighting and set design, succeeded in turning the Old Globe’s small stage into a dazzling panorama of ever-changing environments.

Outside of the theater, companies of all sizes are always looking for people motivated to take on challenges with minimal direction. They appreciate employees who see when something needs to be done and do it. Remember the teen techie who spun onto the stage to hand a mic to a singer in the nick of time? He saw the problem and, without having to be told, did just what needed to be done—with speed and style.

Anyone who has been to a tech rehearsal knows it's a lot about problem solving. If tech were easy, then anybody could do it. But they can't. Duke Ellington (1899–1974), an important jazz composer and bandleader, once remarked, "A problem is a chance for you to do your best." His ability to identify and solve big and small problems is one reason why he was able to keep his large orchestra together for nearly fifty years.

Thanks to your experience in theatrical lighting and sound, you've developed a set of skills that will serve you well in nontheatrical vocations. You've learned the importance of being prepared, dependable, positive, enthusiastic, supportive, self-sufficient, and willing to give 110 percent. Can you think of a job or career where those qualities would not be welcome? Not likely.