Light enhances the appearance of snow falling in this

CHAPTER ONE

WELCOME TO THE TECH CRE

It is opening night. You've been working on this production forever and can't believe that this is it! In your headset, you hear the stage manager say, "Places everyone … Go.

House to half … Go.

House out … Go.

Curtain up … Go.

Light **cue** 1 … Go.

Sound cue 1 … Go."

You focus your attention on your control board, ready to implement all the lighting or sound cues that you have been rehearsing. You're thinking, "Please let's not have any glitches tonight. No one tripping over my cables. No power outages. No cell phones ringing. Let's all just do this!"

Whether you're working the lights or sound, your contribution to a theatrical production is vital. It involves so much more than making sure the stage is lit and the mics are working. If you enjoy responsibility and working with a team, you'll have two important qualities for these roles. You're someone who likes putting on plays and musicals, but not as an actor onstage, thank you very much.

You'd rather be "backstage," making magic happen. (Actually, "backstage" includes the lighting booth and sound desk—not just what is literally backstage or in the wings.)

Getting Started

If your school puts on performances, it's very likely the tech crew will receive training while the cast is rehearsing. Returning members of the crew will show the new kids how things are done. (Of course, the new kids may have great new ideas!) Your school might also offer theatrical tech as a class or a club.

In some schools, productions have separate tech crews for each area—lighting, sound, set, costumes—with a "chief" for every crew. In other schools, there's one big tech crew; everybody gets involved in helping with every aspect of production.

You may also be able to get involved with your local community children's theater. (It's often called "children's theater" even though it's generally for anyone eighteen or younger.) You'll be meeting kids from other schools as you work together to put on plays and musicals. The after-school or summer workshops they stage in lighting, sound, and safety provide a great foundation for you to serve as a crew member for their productions. Also, check out whether your area colleges are offering technical theater workshops for teens. Searching the internet will let you find not only summer theater camps but also those specializing in tech. Your summer experience could launch a career.

Whether at your school or as part of your community theater, tech crews welcome volunteers to help out, since there is always so much to be done. They are looking for people who are dependable, are good at following directions, enjoy learning, and have a positive attitude. Enjoying working with electronic equipment is essential; your computer skills are a plus. If you'll be **hanging**—which means installing lights or speakers—you'll learn how to climb ladders safely. (There are tips on ladder safety, along with other smart safety practices, in chapter 4.)

Is This for You?

Theater is a collaborative art form. You're asked to be creative, yes, and to be a problem solver, but you're not entirely free to do whatever you want. Other people may disagree with your ideas. And if they happen to be the director, stage manager, or technical director, you're going to have to "let it go."

For both lighting and sound technicians, a basic requirement is that you enjoy working with equipment. And that involves learning a lot of terminology.

Whether you attend a workshop or learn on the job, you will soon discover that when it comes to lighting, moving a "barn door" lets you control the shape of a light beam, and that when you are "bench focusing," you'll be tuning a lighting **instrument** for maximum light output. And of course, you'll know that maximum light output means making things really bright. **Gel** is something the makeup department may use on an actor's hair, but in lighting, adding a gel will allow you to color a light to affect the mood on the stage.

You'll learn that when you're asked to replace a lamp, you need to get a new lightbulb, and you will know to use gloves since otherwise your fingers would make the lamp explode. You won't look for a key when told to lock the instrument; instead, you'll tighten all the adjustable parts so nothing moves, and it shines on just what it was intended to illuminate. In a tech rehearsal, if the stage manager asks you to "kill the spots," he wants you to turn off the spotlights, possibly to make it more comfortable for the actors.

Be ready to take some notes if you're learning how to run the sound board, or **mixer**. It doesn't make things any easier that many terms have nicknames:

Fader—slider that controls the sound on the mixer

Pot—potentiometer

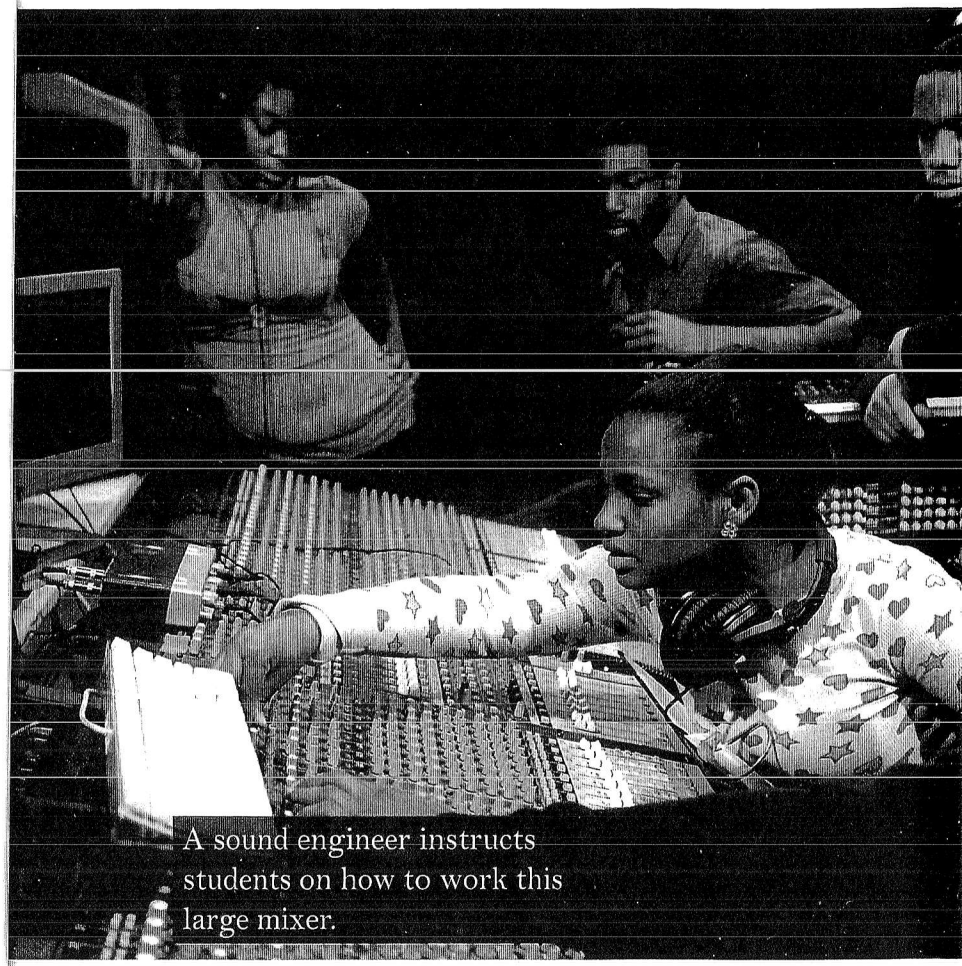
Bus—main out **channel**

Preamp—preamplifier

EQ—equalizer

When you see your first sound board, the only label you might recognize is MUTE. After a while, you'll understand "that peak light tells us the signal is too loud and is punching the top of our max volume." If you'd like to see a sound board and check whether running one looks like something you'd like to do, see "Sound System Set Up" under video links in the For More Information section at the end of this book.

An important rule for sound is this: Your ears have the final say. You'll be training them to hear



A sound engineer instructs students on how to work this large mixer.

what can be improved and what can be clearer, and how to make it easier for the listener to follow the dialogue or songs.

If you have a background or interest in music composition, here is an area where you can add something truly your own. Access a video-sharing website like YouTube and search for "sound design portfolio" or "sound design demo reel" to hear what sound designers have been creating for theater, film, and games.

Some of the Basics

Theatrical sound and lighting require a combination of technical skill and creative ability. With light and sound, you can:

- Create mood and changes in mood
- Establish the time of day, season, and weather
- Contribute to the sense of reality
- Shift emphasis from one stage area to another (especially with lights)
- Stimulate audience expectations of what is to come
- Build transitions between scenes
- And so much more!

The first on our list—creating mood—is also called creating **ambiance.** Lighting and sound are vital in enhancing the emotions of the story.

Imagine that you are doing a play that takes place in a forest. The scene prep crew has painted some lush trees and bushes that will be used throughout the play. But in act 1, the main character—let's call him Albion—senses something menacing about the forest. (The forest turns out to be the home of a malevolent warlock.) Would you want Albion to be well lit or in shadows? Then, in act 2, he defeats the warlock, and the forest becomes the scene of a raucous celebration. You're working with the same scenery, but now you need to completely change the ambiance. What sort of lighting would you choose?

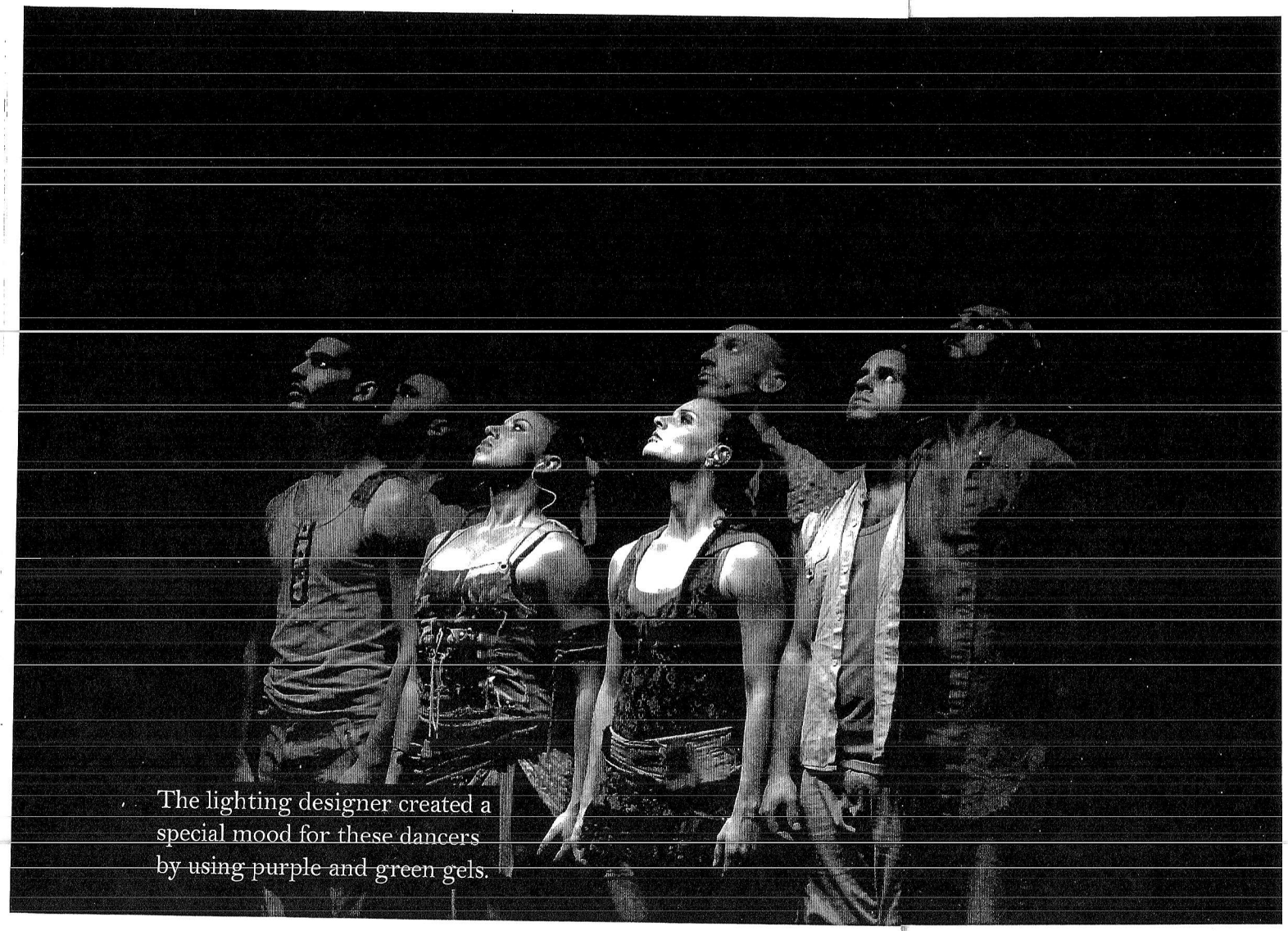
Music is not just used for musicals. It can do a lot to create ambiance. Think about a castle location. If you're designing the sound for a play based on Bram Stoker's novel *Dracula*, what music would you use? But suppose, in a different play, a castle is the setting for a slapstick comedy. Now what music might you use?

Shifting emphasis is an important role for lighting. With lights, you can draw the audience's attention to what you and the director want them to see. The famous film and theater director Max Reinhardt once said, "The art of lighting the stage consists of putting light where you want it and taking it away from where you don't want it."

Let There Be Light

Most theatrical productions call for a lot more than dimming the house lights—the main lights in the theater—to signal the performance is about to start, and then turning up the stage lights.

The McCandless Method is the name for the basic lighting theory in use today. It was created by "the father of modern lighting design," Stanley McCandless, working in the first half of the twentieth century. He recognized that just lighting the actors from the front makes them look flat and makes it hard for the audience to read their faces—which often reveal their emotional responses to whatever is taking place onstage and/or among the characters. By placing lights to the right and left of



The lighting designer created a special mood for these dancers by using purple and green gels.

the actors, and 45 degrees above the plane of the actors, he was able to sculpt their faces. This made them look more rounded instead of flat.

He then took lighting for the stage an important step further through the use of colors. The primary pair of lights is at different temperatures, one cooler than the other. One may be blue (cool) and the other amber (warm). This combination gives depth to the actors' faces, much the way stage makeup exaggerates and clarifies facial characteristics and expressions.

Another key advantage of pairing warm and cool lights (called "lanterns" in the theater) is that it conveys the feeling of natural light, which makes the audience sense they are seeing something familiar, real. Shifting the balance of warm and cool lanterns can create the appearance of dawn turning to midday or late afternoon.

Color is adjusted with the use of gels. These are thin pieces of colored, translucent polycarbonate or polyester that are placed in front of the light to filter the light to the desired color. When gels were first used, they were made out of gelatin. Today's filters last a lot longer, though the heat from the light makes them fade over time, so the light crew needs to check them regularly. When gels were still made of gelatin, newbies on lighting crews were told to clean dusty gels by rinsing them in hot water. Imagine their faces when the gels melted!

One of the best things about working with theatrical lighting and sound is using your creativity. Sometimes, creativity is born out of dissatisfaction. It was a dissatisfied actor playing Peter Pan in 1908 who created a new approach in lighting design. The actor, Maude Adams, was dissatisfied with the effect of footlights, which lit actors from below, creating unnatural shadows. (Not only unnatural but also spooky!)

This 1905 photograph of Maude Adams shows her on stage as Peter Pan.

The problem she wrestled with was how to counteract the intensity of the footlights. She was searching for something to give the effect of powerful, sun-like light from above and was inspired when she saw a great chandelier in use at the Comédie-Française, the French national theater. Adams proceeded to invent a light bridge above the stage that could hold seven operators who could **focus** and refocus seven spotlights, producing, she claimed, "the equivalent of eight thousand candles."

Teams of operators would be required for decades. In fact, lighting crews were known to wear roller skates, so they could reach all the instruments quickly when they needed to dim each one. It wasn't until 1975 that a computer-assisted memory lighting system was first used at the Shubert Theatre on Broadway in New York. The lighting designer was Tharon Musser; the show was *A Chorus Line.*

If you want to work with theatrical light or sound, you'll be known as a "techie" and serve as part of "the crew." Your fellow techies are easy to spot: They usually wear all black, so the audience will be less likely to see them if or when they need to be onstage to set scenery or props during the performance. The work you'll be doing will be critical to the success of the show, yet it's often a thankless job. After all, nobody goes home whistling the lights. However, without the crew, the actors are just standing on a bare stage in the dark.