6.4: A Brief History of Stage Lighting

We all take for granted the electric lights we have in our homes. It is assumed that every space we enter in the modern world will have electricity and other modern conveniences. In our everyday lives, we often forget that even a century ago, amenities such as electric lighting, indoor plumbing, and air-conditioning were new technologies. Many texts on lighting design do not take the past into account. However, when you look at lighting design from a historical perspective, you can gain a greater appreciation of what it has achieved.

Texts dealing with ancient Greek and Roman theatre deal very little with the lighting of plays, stating only that it is assumed that they took place during the day. Since play festivals would have taken place over the course of a whole day, it is thought that torches and shiny pieces of mica were used to redirect the natural light entering the theatre. This would allow actors and moments to be highlighted for the audience, much as modern lighting attempts to do.

Similar practices in lighting continued until the sixteenth century. At the dawn of the Renaissance, theatre experienced a rebirth. Stage settings became more elaborate and stage machinery became more complex. Some theatres began to move indoors. As the physical space of the theatre changed, so did theatrical lighting. Theatres began to use chandeliers suspended from the ceiling and oil lamps hung on walls and scenery to light the stage. This took a great deal of candles, oil, and effort to create enough light.

In the early 1800s, theatre practitioners began to use reflectors to intensify the effects of the candles and lamps used to light the stage and audience. Later, theatres also began using candles or oil lamps at the front edge of the stage as footlights. They also placed them in vertical stacks in the wings to provide additional illumination. While these lights provided significant illumination, they also created a serious fire hazard. Over the years, many theatres burned down because of this method of lighting.

In 1792, William Murdock developed a process for distilling gas from coal, inventing a new form of illumination. Gas lighting quickly gained public popularity and rapidly moved into theatres and other public spaces in Europe and North
America. A great improvement over candles and oil lamps, it provided a brighter and cleaner-burning source of light that was also easily controllable. While gas was a great improvement over earlier methods, it still posed a fire hazard as well as producing a great amount of heat and odor.

The angle of light can dramatically alter the mood of a scene. In this scene from a 2012 production of the musical Urinetown, the old practice of footlights was used to give the actors' faces a ghastly, menacing appearance. Constans Theatre, University of Florida School of Theatre and Dance, directed by Charlie Mitchell, lighting design by Timothy A. Reed. Photo by Stan Kaye.

The next great improvement in stage lighting came in 1879 when Thomas Edison developed a practical incandescent lamp, or the light bulb as it is known today. Many lamps used today are variations on Edison’s design. By 1900, most theatres had converted to electricity and were using incandescent lamps rather than gaslight. With this innovation, theatres slowly started moving into the twentieth century.

At first, the introduction of electricity itself did not change the way in which lighting operated. Electric lines were run to lights and electric fixtures operated much as gas fixtures had done previously. However, with the advent of the first circuit board electronics, stage lighting technology improved by leaps and bounds in the second half of the twentieth century. One of the biggest breakthroughs came in 1975 when the first computerized lightboard—a specialized piece of computer equipment designed and used to control theatrical lights—was used on Broadway by Tharon Musser in her groundbreaking lighting design for the musical A Chorus Line. It paved the way for the use of modern technology in lighting design.

Since the introduction of computer technology, lighting has changed almost as fast as the computer market itself. Each new generation of lightboard can process faster, control more lights, and interface more easily with the user. Lighting instruments are brighter and more energy efficient.
Automated fixtures have been introduced to the theatre market and continue to grow in popularity and usefulness. Now, LEDs (light-emitting diodes) are being introduced as theatrical lights. They are more energy efficient, produce less heat, and are very controllable. As lighting technology improves, one is sure to see even greater changes in the tools of lighting design.

**Lighting Pioneers**

Adolphe Appia was born in 1862 in Geneva, Switzerland, the son of a physician who supported music but disliked theatre mostly because of his strict Calvinist views. As a young man, Appia studied music, including the operas of Richard Wagner. Appia disliked the traditional staging of Wagner's operas, with their two-dimensional painted scenery and lack of unity. Instead, he favored the idea of an artistic unity that would blend the acting with the staging, lighting, and music. Appia believed that shadow was as important as highlight. It helped to create depth and heightened the reality of the piece. His use of three-dimensional scenery and lighting to artistically unify a theatrical piece helped to revolutionize the ways in which productions were staged and lighting was used.

Stanley McCandless (1897-1967) is considered the father of modern lighting design. He developed what is known as the McCandless Method, which he published in *A Method of Lighting the Stage* in 1932. His theory was that light cast on the actor from a forty-five-
degree angle enhanced visibility and appeared natural. He maintained that there should be two lights at forty-five-degree angles aimed at the front of an actor-ons with a warm tint and one with a cool tint. This technique is still used today.

Jean Rosenthal (1912-1969) is considered the first professional lighting designer. She studied lighting design with McCandless at Yale University from 1931 to 1934. During her career, she became the first resident designer for the Metropolitan Opera in New York City. She began working at a time when women were not accepted as professionals in the backstage theatre world. She is perhaps most well known for her work with the Martha Graham dance company; her lighting techniques for dance have become standards in the dance lighting repertoire.

Tharon Musser (1925-2009) began her career in 1956 with her lighting of the premiere of Eugene O’Neill’s Long Day’s Journey into Night. She had a prolific career as a lighting designer and was a pioneer in her field. She was nominated for ten Tony Awards throughout her career and won three. She is perhaps most well known for her Introduction of the computerized lighting board to Broadway.

Jennifer Tipton (1937- ) has truly managed to unify the field of lighting design through her work in theatre, opera, and dance. Tipton has been working in theatre since 1969. She is best known for her use of white light and how it shapes the space. Her work and innovative style are currently influencing designers around the world.