Online High School Technical Theater Course

Intro to Lighting

In this video, we will explore the theory of theatrical lighting design and some of the history behind it. We also cover theatrical lighting fundamentals, types of fixtures and their application, and illustrate the importance of the direction of light and color.

For course video: https://youtu.be/NRAAlgrFhbQ
For course materials: https://www.basshall.com/techcourselighting
For questions and comments: https://www.basshall.com/techquestions

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Glossary

Visibility - The state of being able to see or be seen. The most important fundamental. If the audience can't see, everything else the lighting designer does is a waste of time. Studies have shown that visibility affects our ability to understand spoken speech. This doesn't mean the audience must see everything all the time, but they should be focused on what the story is telling us.

Intensity - The strength or amount of light produced by a specific lamp source. It is not always about how 'bright' the light is, but how 'dim'.

Distribution - Where the light hits and from what angle. Careful consideration of these factors can determine the visibility of the actor, depth and detail of scenery, as well as other areas such as given circumstances and mood.

Color - The use of color is one of the most noticeable defining elements of any lighting design. For many designers, color is the most personal of elements, and often times not only defines the design, but the personal style of the designer.

Movement – Any change in visibility, intensity, distribution, or color, as well as physical movement when using Moving Lights. Not as apparent as some of the others, this is still a very important element that has a significant effect on the lighting design.

Apparent Movement – When an object or performer moves in and out of light.

Actual Movement - When the light itself moves.

Cue – The trigger for an action to be carried out at a specific time, normally called by a stage manager. They can be necessary for a lighting change or effect, a sound effect, or some sort of stage or set movement/change.

Lightplot – A document like an architectural blueprint used specifically by theatrical lighting designers to illustrate and communicate the lighting design to members of the crew and staff.

Electromagnetic Spectrum – The range of frequencies of electromagnetic radiation. Includes all visible and invisible light, radio and television signals, x-rays and microwaves.

Wash Fixture – Lighting fixture that can be used to create a general "fill" of light and color evenly across the stage.

Spot Fixture – Fixture with a hard-edged beam. These fixtures are best for creating a "special" or using light to mask off a small, precise area, and also are the fixtures to use if you want to project a pattern, or "gobo".

Follow Spot - The most commonly known instrument. Follow spots are used to highlight and follow a single performer onstage. Spotlights are controlled by a spotlight operator (or Spot Op) who tracks actors around the stage. Follow spots require a certain amount of skill to operate smoothly. They typically have a variety of colors that can be inserted with the flip of a lever, as well as a gate, dowser, focus control, and an iris. Used to follow a lead talent on stage.

Ellipsoidal (ERS) - Ellipsoidal reflector spotlights do a lot and can be very precise. They can accept gobos and irises and have built-in shutters for shaping the field of light. Ellipsoidals require a degree of maintenance and finesse; they are less easy to use than

other types of instruments and are a bit more expensive. Used often for front light or side light in dance.

Gobo (Template) - A small, stenciled, circular disc used in lighting fixtures to create a projected image or pattern. The term Gobo is short for “Go Between Optics”, describing the location where it needs to be positioned in the light path of a lighting fixture.

Focal Point – The point at which light waves intersect after refraction or reflection.

PAR (Parabolic aluminized reflector) - Short for parabolic aluminized reflectors. These lights throw a bright hazy beam in the shape of an oval or parabola.

Fresnel – Pronounced *freh-NEL* - A Fresnel lens maintains the curvature and prescription of a large convex lens in a much thinner version. The curve of the lens is stepped back towards the flat side at regular intervals. This is less expensive to produce and allows more even heat distribution through the glass, protecting the lens from expansion and contraction. The trade-off is a fuzzier, softer field. Used often for top light, backlight, and general washes.

Cyclorama - Cyc for short. A background device employed to cover the back and sometimes the sides of the stage and used with special lighting to create the illusion of sky, open space, or great distance at the rear of the stage setting.

Cyc Lights - An instrument specially designed for lighting cycloramas. They serve one of the same functions as a strip light. Their reflector, however, shapes the field in such a way that the cyc is illuminated as brightly at the bottom as it is at the top. Cyc lights are frequently used in sets of three cells, with a different color in each, allowing color mixing. Twelve single cell units might be hung with red, blue, and green alternating, with all the reds controlled together, all the blues, etc. Used often to light a cyclorama, backdrop or background.

Moving Lights - Remotely controllable "intelligent" lighting instrument. Each instrument is capable of a massive variety of effects which are operated live via a moving light control desk or can be pre-programmed by a standard memory lighting desk. The instruments require a power supply and a data cable (normally carrying DMX512 signal from the control desk).

Back Light – Light from the back of a performer or object. Often used to pull the subject away from the background, sculps and adds depth to the subject. In film this can be referred to a hair light.

Side Light – Light from up above or at the height of the subject to help sculpt the body and add fill to the sides of the subject. In film this is referred to as fill light.

Top Light - Light directly above the subject.

Front Light – Light to the front of the subject.

Three Point Lighting - A method of lighting using a front light in conjunction with two side lights.

Four Point Lighting – A method of lighting similar to Three Point Lighting using a front light, two side lights, and a backlight or using a front light, a fill light, a backlight, and w a background light that illuminates walls or other scenery around the subject.

McCandless Method – This method is widely known and used by theatre professionals. It uses two front lights at a 45-degree angle of the subject, one side being a warm gel color and the other side being a cool gel color. This helps replicate a highlight and shadow contrast with lighting.

Links
Working in the Theatre: Lighting Design (Hamilton LD) - Video
Wicked Lighting - Video
Associate Lighting Designer - Web
Vintage Stage Lighting Instruments - Web
Hamilton Spot Op - Video