

Basic Lighting Principles

Without a doubt, lighting is the most important element in scenic design because it affects the creation of mood and atmosphere. The exuberant nature of a musical is enhanced by the cheerfulness of a brightly illuminated stage. A mystery takes on a spine-tingling quality when the high walls and deep recesses of a deserted mansion are lost in the depths of shadows. An eerie fog, an iridescent liquid in a witch's cauldron, the ghostly whiteness of a full moon, the aura of intrigue and death in the shadowy alleys of counterespionage—you can create each of these on stage by the right choice of color, gobos, and proper distribution and brightness of light from carefully selected instruments. Effective stage lighting is based on three qualities of light: intensity, or brightness; color; and distribution, or area covered.

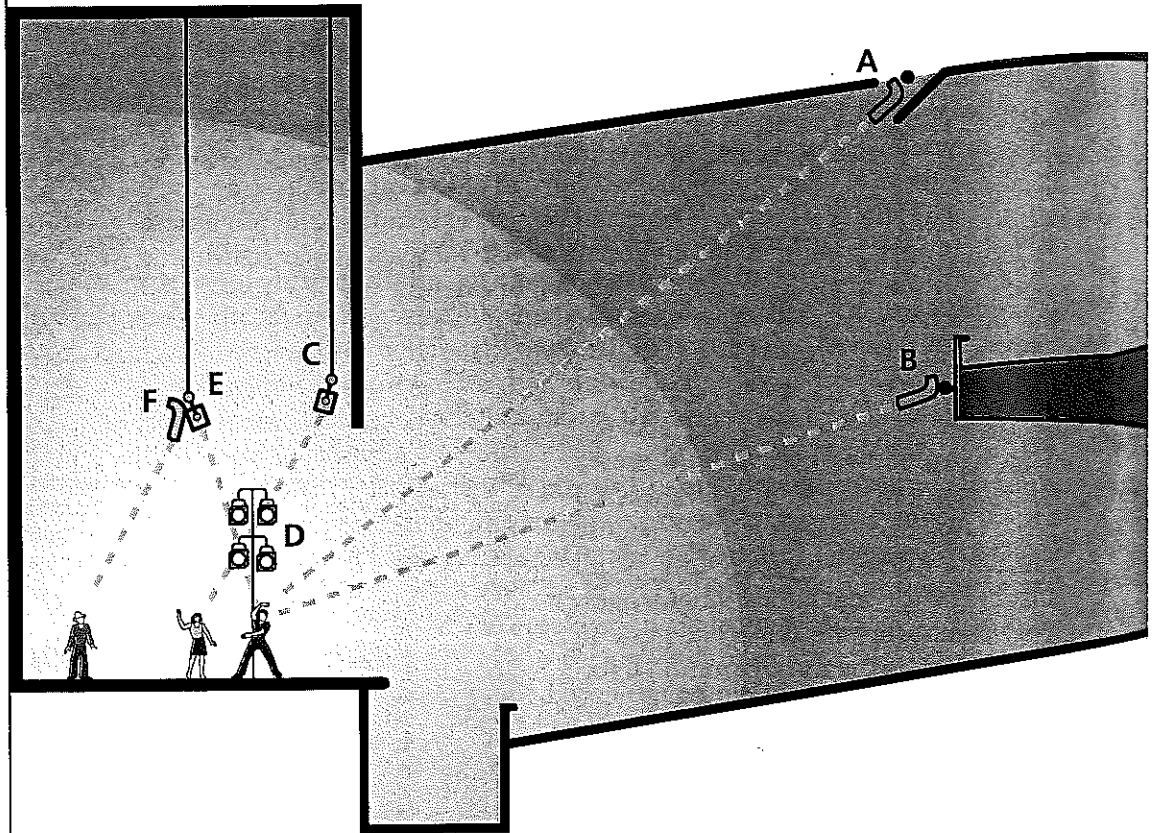
INTENSITY

The lighting designer should never allow actors to be lost in unintentional pockets of dark shadows. Nor should the lighting designer try to eliminate all shadows with generalized bright light. This results in one huge flat glow of light, which is the most common lighting error on the high school stage. This problem stems from the incorrect notion that lighting a set means turning all available instruments on full. This garish amber-white light makes actors "dead" on the stage or makes them disappear into the set. Many of the most successful designers today use only spotlights and floods. Others add borders and foots for blending only. In any case, strong lights should be kept off the walls of a set. Most designers suggest keeping the upper walls in shadow.

Intense lighting can be used to emphasize certain aspects of a scene. This character in *The Crucifer of Blood*, a Sherlock Holmes mystery, is unobtrusively lit from the front, but the overall effect of the lighting is to make the audience think the scene is illuminated by only the "moonlight" streaming in through the latticed windows.



LOCATION OF LIGHTING



- A = Key and fill first depth
- B = Wash
- C = Key and fill second depth
- D = Sidelighting
- E = Backlighting
- F = Key and fill third depth

Diagram of a general lighting plan for downstage areas

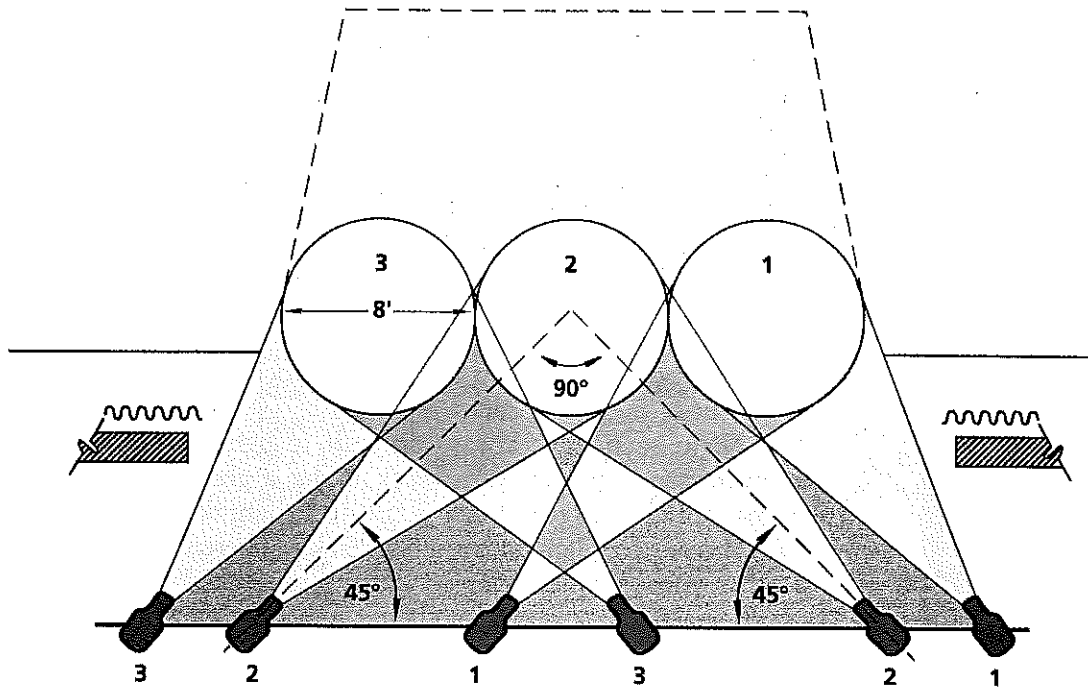
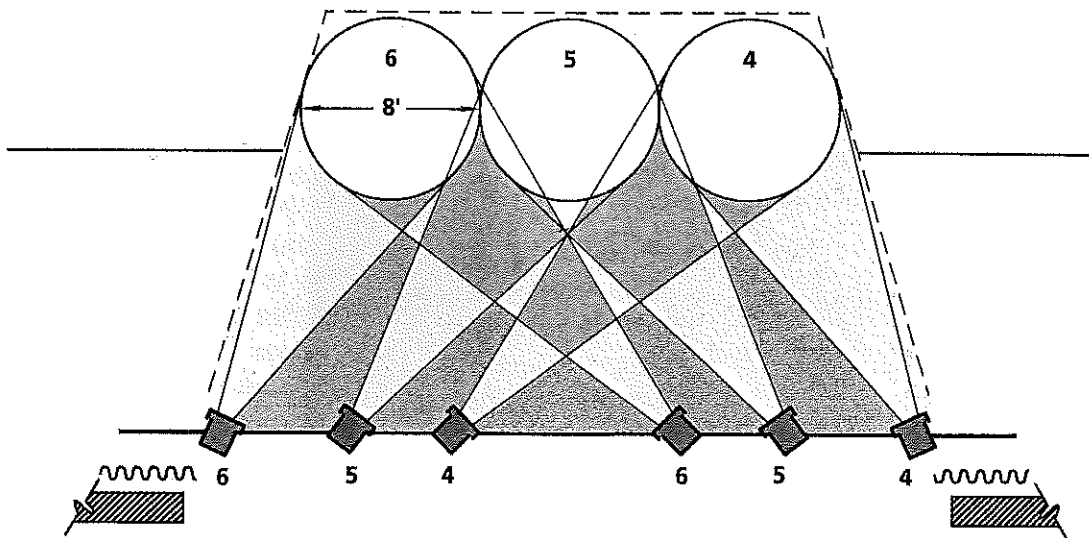


Diagram of a general lighting plan for upstage areas



FROM THE PROS

"If you can imagine the two-hour show as a canvas, you then work with very broad strokes to rough out the pace and the direction of the show in a way that allows you to build on it and give it different plateaus, and, finally, a really good ending."

—PATRICK WOODROFFE,
LIGHTING DESIGNER
FOR THE ROLLING
STONES' VOODOO
LOUNGE TOUR, 1994

Sharply contrasting colored lights give this scene from *Blood Wedding* a high level of energy. The blue light conveys serenity, while the red light conveys power and movement.



Most lighting changes should happen gradually by **dimming up** or **dimming down**. Lights rarely pop on or off except when a light switch is flipped onstage. Even then, not all instruments come on at once. Within a scene, lights normally change with a **crossfade**: some lights come up at the same time others dim down. The audience should not consciously notice that a change is taking place. Technicians must therefore begin light changes far in advance in order to accomplish them smoothly.

There are some general considerations to remember when working with stage lights. Brightly lighted scenes, especially of the type frequently found in musical plays, can cause changes in the appearance of makeup and costumes. Strong amber can turn colorful fabrics into a drab brown; too much red may wash the rouge out of the actors' faces.

Night scenes are always difficult to light without having costumes and makeup turn black under a green-blue light. A simple principle to remember is "primary light on a primary pigment turns the pigment purplish-black." Therefore, the colors used in most night scenes will make rouge and lipstick look grotesque. When scenes are to be played in the dark, it is always best to have some light even if no attempt is made to represent natural light sources. An unlighted stage is dead. Figures outlined

against a moonlit window, a shaft of light through a window or skylight, a crack of light from under a door, or the glow of an old-fashioned streetlight can provide a realistic source for the stage light. However, if no other choice is left, a beam or two of colored light that is there solely for the reason that the actors must be seen will meet the requirements for light. The audience should never be left completely in the dark for more than a few seconds.

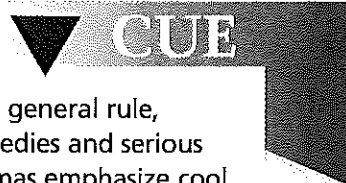
COLOR

The effect of light on color is difficult to predict accurately because of the relationship between light, pigments, and dyes. Some generalizations, however, can be made:

red light on red	= red
red light on blue	= violet
red light on green	= gray
red light on yellow	= orange
red light on purple	= red
blue light on red	= violet-black
blue light on blue	= blue
blue light on green	= blue-green
blue light on yellow	= green
blue light on orange	= brown
amber light on red	= brown
amber light on blue	= greenish-orange
amber light on green	= greenish-orange
amber light on violet	= red
green light on red	= black
green light on green	= green
yellow light on blue	= blue-green
yellow light on green	= green
yellow light on violet	= brown

The only way to produce green light is by using green color media. The delicate colors are the most preferred gelatins in use today. No-color pink, flesh pink, straws, and ambers—especially bastard amber, a light scarlet—are some of the warm colors used. And special lavender, surprise pink, no-color blue, and medium and daylight blue are some of the best cool color gelatins. Sometimes designers use frost and chocolate for special effects. Green-blue makes a better night scene than blues or violets. Many lighting designers prefer white light from an ungelled instrument as a cool light source.

Curtains, costumes, and furnishings are affected by light. Smooth, shiny fabrics reveal light and shadows. Heavy, coarse materials, no matter how inexpensive, absorb much light and often appear quite expensive to the audience; outing flannel can look like expensive velour. The important consideration is the brilliance of the color of the material and the color of the stage lighting for the scene in which the material is to be used. Patterns and prints cause many problems, as do several colors in the same costume. Lighting period plays is always difficult, for the mixture of lace, silk, velvet, wigs, and makeup is a lighting technician's nightmare.



As a general rule, tragedies and serious dramas emphasize cool colors, whereas comedies stress warm colors.

DISTRIBUTION

The most effective lighting considers the natural light sources on the set—the sun or moon, a streetlight, lamps, fireplaces, televisions, candles, or lanterns. To avoid a pasteboard-figure effect, designers usually pair spotlights. One uses warm colors and comes from the same side of the stage as the sources of natural light. The other comes from the opposite direction, the direction of diffused or reflected light, and uses cool colors. Each spotlight is aimed in and down at a forty-five-degree angle toward the area to be lighted (see illustration on page 454). This results in the most dramatic effect of highlight and shadow. Designers usually avoid straight-on lighting from centrally located instruments because it serves as a general wash. (A **wash** eliminates shadows and brings a strength of light to the central acting area.) Instead, spotlights used for the wash are best located on the balcony or on the sides of the auditorium and aimed diagonally across the stage.

The most important acting areas need the most light. Bringing a greater quantity of light into a given acting area makes the actor playing in that area stand out. In any lighting plan there is always **key light**, the strongest light aimed at each acting area, and **fill light**, light that fills in the shadows. **Sidelighting** from upstage of the tormentor, using a different color from the front lighting, can help model actors' features and accent costumes. It also adds a touch of life to the production. **Backlighting** comes from above and behind the actor, setting the performer off from the background. The lighting designer may help shift the focus of attention back and forth with the smooth flow of light from one actor or area to another throughout the play.

For this scene from *Les Liaisons Dangereuses*, key light emphasizes the character, while fill light points up the chaise longue behind him.

