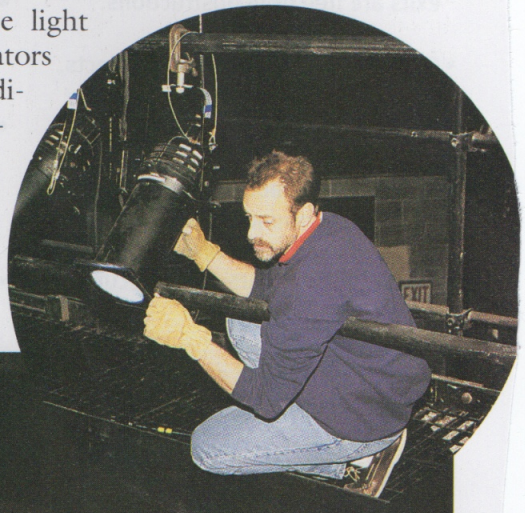
Lighting and Sound Crews

The lighting and sound crews stay busy in a variety of workspaces: they can be found in the scene shop, where lighting instruments, electrical cable, and other equipment are often stored and maintained; on the stage, where lights and microphones are hung and positioned; backstage, where speakers, projectors, and other equipment may be placed; and in the light and sound booths, usually located in the house. From their booths in the house during a show, the light board and sound board operators can see and hear what the audience hears and make any necessary adjustments.



Lighting: Equipment and Supplies

Lighting Equipment

LIGHTING CONTROL EQUIPMENT

lighting control board and **system** for controlling the operation and intensity of lighting instruments; computerized lighting systems operate lights based on information input and stored electronically on disk or CD

headset for communicating between the light board operator and the stage crew; may be a complex system or radio- or battery-operated

LIGHTING INSTRUMENTS

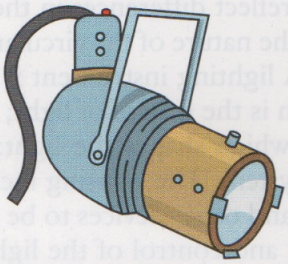
ellipsoidal reflector spotlight (ERS) for throwing a strong, focused beam from a distance; sometimes called a **Leko**

Fresnel spotlight for shorter throws covering a large area with soft, diffuse light

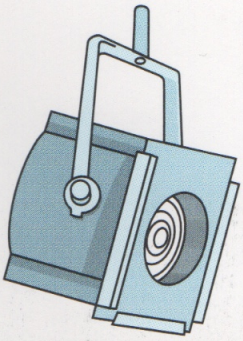
followspot for throwing bright, focused light on a moving performer

ellipsoidal reflector floodlight, or **scoop** for illuminating large areas of the stage

strip lights, or **border lights** for washing light over a large area of the stage or onto scenery



Ellipsoidal reflector spotlight



Fresnel spotlight

Lighting Supplies

LAMPS

incandescent (standard lamps with medium, mogul/bipost, or candelabra/prefocus screw bases) for use in strip lights, floodlights, and wall sources; wattage varies according to use

halogen lamps (energy-efficient, high-intensity lamps with medium and candelabra/prefocus bases) for use in spotlights; wattage varies according to type and use

LIGHTING INSTRUMENT ACCESSORIES

gelatins, or **gels** (color filters) for casting colored light from a spotlight

gel frames for holding gels

gobos, or **cookies** (metallic disks with cut patterns) for casting light patterns from a spotlight

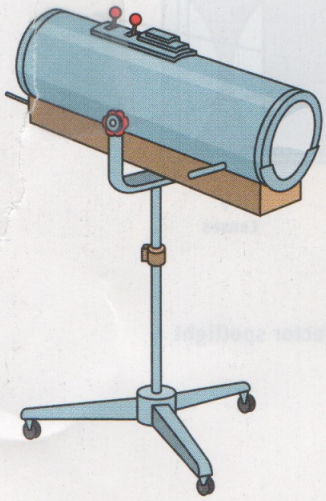
top hats for narrowing the beam of a spotlight

barn doors (folding flaps on a metal frame) for shaping the beam of a light

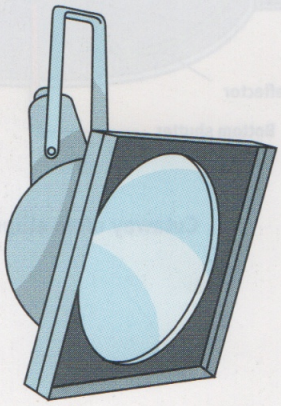
plano-convex, step, and **Fresnel lenses** for spotlights

ELECTRICAL AND RIGGING SUPPLIES

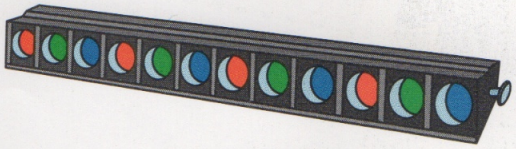
male/female connectors (twist-lock, locking grounded-pin, Edison), **twofers, triples, electrical cable, wire strippers, wire crimpers, 9-volt batteries** (for headsets), **electrical tape, duct tape, safety chains**



Followspot



Floodlight



Strip lights

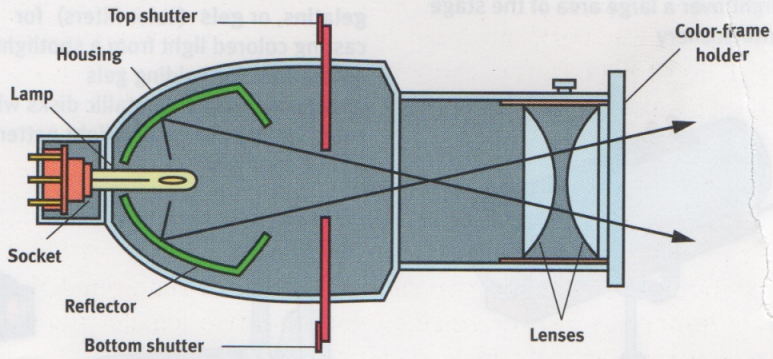
Lighting Basics

Four basic types of lighting instruments are used for stage lighting: spotlights, floodlights (scoops), followspots, and strip lights. Their uses reflect differences in the **throw,** or distance, the light can be cast and the nature of the circular beam cast—a hard- or soft-edged light.

A lighting instrument is composed of four basic parts: the **lamp,** which is the source of light; the **reflector,** which reflects the light; the **lens,** which shapes the light; and the metal **housing,** which encloses the system. The housing includes features that allow color filters, or **gels,** and other devices to be attached to the instrument for enhancement and control of the light beam. The housing also has a handle from which to **hang,** or attach and position, the light. Most lights are hung above the stage on a wood or metal pipe called a **batten.** Followspots are usually mounted on a wheeled light stand and positioned in a balcony or the light booth.

The lights are controlled from the lighting control board, which houses or is connected to a dimmer. A **dimmer** is an electrical device that controls the brightness of the lighting instruments. One dimmer switch may control more than one instrument.

Each stage light is connected to the system by an electrical cable running from the instrument to a stage outlet. A standard electrical cable on a lighting instrument is two feet long. When the light is more than two feet from an outlet, or when several instruments need to be plugged into the same outlet, you need to make an extension cable.



Cutaway of an ellipsoidal reflector spotlight

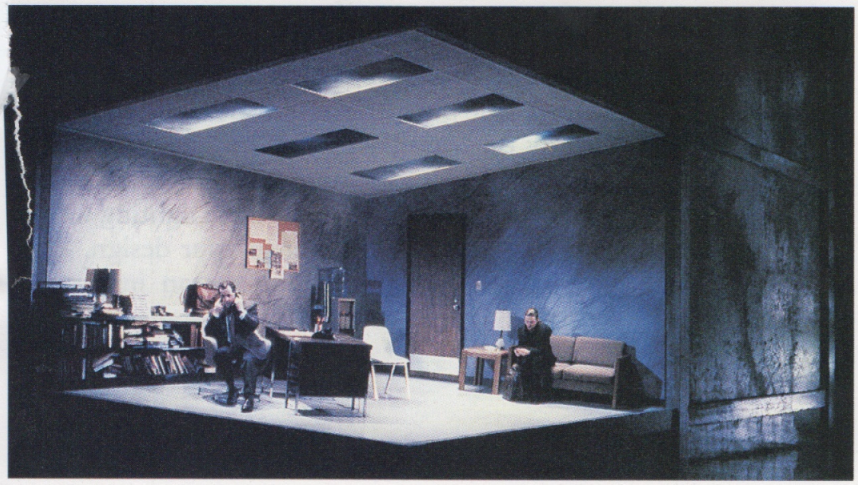
Lighting Design

Set designers may envision lighting effects they hope to see and may even sketch in ideas on a ground plan, but they don't usually determine the location of lights or the way in which the lights are hung. Decisions about the way to hang the lights are left to the lighting designer and crew.

Script Analysis for the Lighting Designer

As a lighting designer, your decisions about lighting can dramatically affect the production. To make informed decisions about lighting design, read the script with the ground plan in hand and make notes in your Theatre Notebook about changes in location, mood, and time of day. Discuss the style and mood of the play with the director and set designer. As you develop a design that fits the production concept, make sketches or collect pictures showing the moods and effects you would like to achieve.

Side lighting is used to create the effect of a painting in this production of *A Game of Love and Chance* by Pierre Carlet de Chamblain de Marivaux. What mood is suggested by the lighting? What time of day is suggested?



The fluorescent lighting effect for this production of David Mamet's *Oleanna* helps to create the harsh, uncomfortable atmosphere of a threatening office environment.

Acting and Lighting Areas

To achieve the lighting effects you have decided upon, you will need to manipulate the distribution of light over the stage area; the intensity, or brightness, of light that strikes the stage; the movement of light in followspots; and the color of individual lamps.

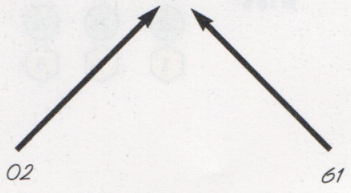
The stage is usually broken up into **acting areas,** spaces onstage defined by the blocking patterns of actors in a scene. Each acting area must be lit at some point in the performance. Often, more than one acting area is lit at once; therefore, to create a smooth wash of light, you will need to overlap the light beams shining on each acting area by about one-third. These light beams, which are approximately 8 to 12 feet in diameter where they strike the stage floor, can be referred to as **lighting areas.**

Generally, each lighting area should be lit by at least two lighting instruments at 90° angles toward each other. One is the **key light,** which is the brightest of the two. The other is the **fill light,** which fills in shadows created by the key light. Often one of these two instruments will have a warmer-colored gel and one will have a cooler-colored gel.

The Lighting Key

The angle and color for each lighting area can be shown in a simple diagram called a **lighting key.** Keeping the principle light source in mind (sunlight, lamplight, firelight) will help you decide which colors to use with which instruments. The colors of the set and costumes will be affected by the colors of your lights, so you can't really test the effectiveness of your lighting key until the set is mostly dressed and costumes are designed.

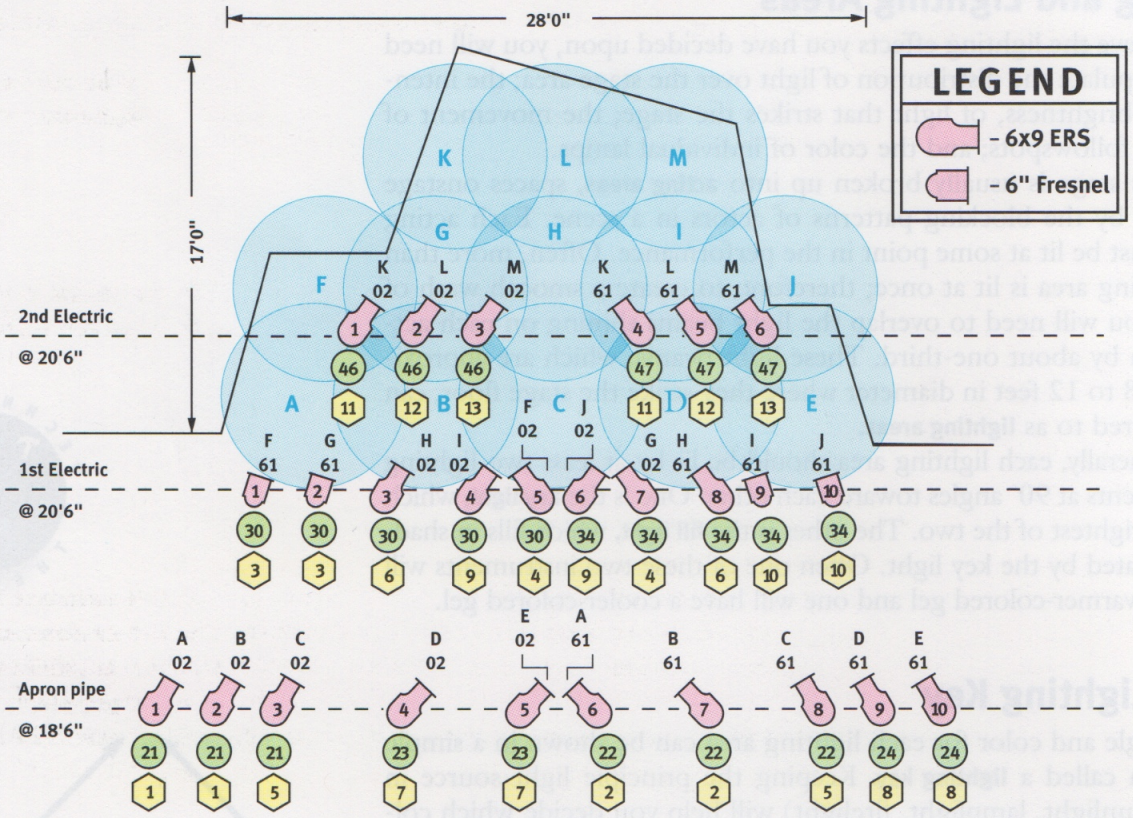
To help you keep track of the lighting configuration you have designed, draw a **lighting plot,** which shows where you intend to place various lights and prepare an **instrument schedule,** which puts this information into a chart format for reference.



Two-source lighting key for John Osborne's *Look Back in Anger*

The Lighting Plot

The simplest way to create a lighting plot is to use a copy of the set designer's ground plan (p. 208), which should show the set within the theatre space. Identify the acting areas on the stage so you can angle lights into those areas. Add information regarding the location of electrical circuits and existing lights. Then add the lighting instruments and information about each according to your design. After completing your plot, record the information on an instrument schedule.



Lighting plot for John Osborne's *Look Back in Anger*